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# JOURNAL



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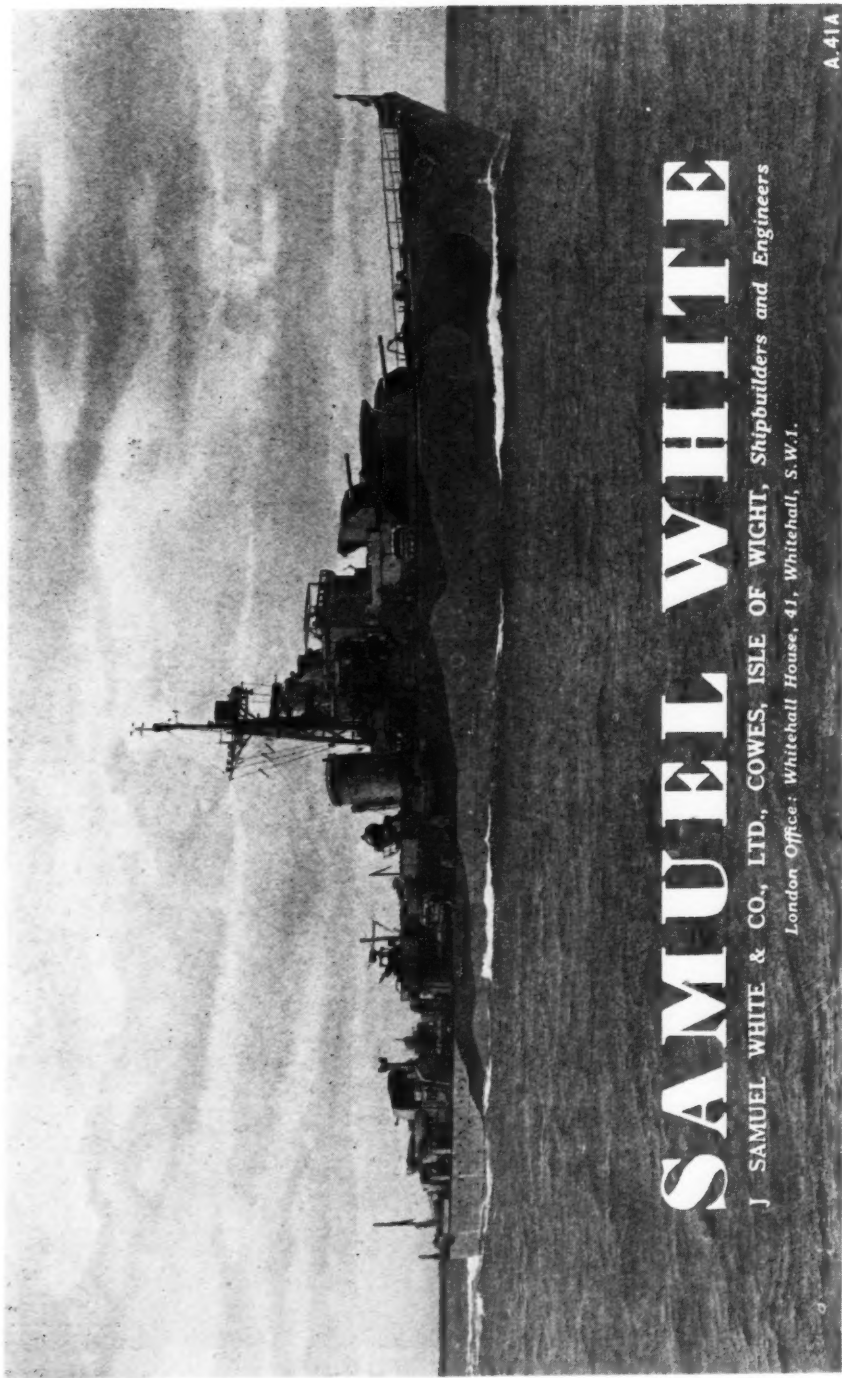


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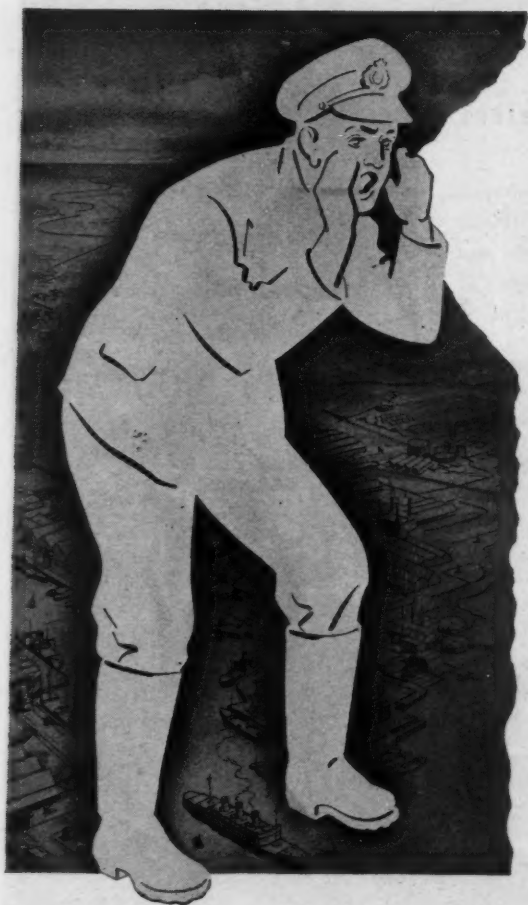
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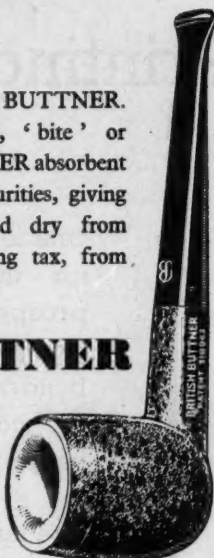
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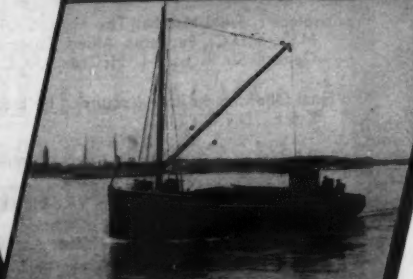
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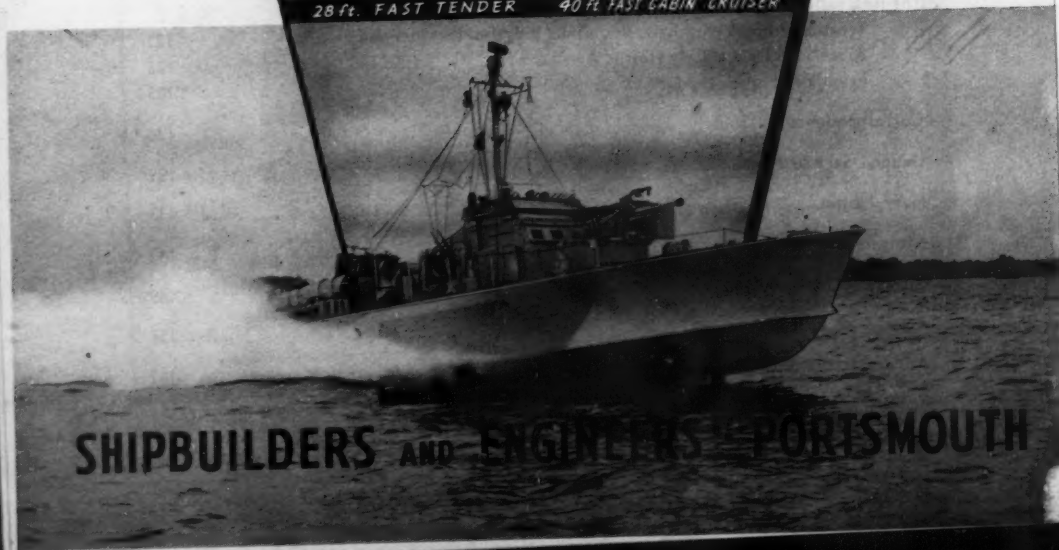
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Lieutenant-General H.H. THE MAHARAJAH OF JAMMU AND KASHMIR, G.C.S.I., G.C.I.E., K.C.V.O., A.D.C. (India).

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*Curator and Assistant Executive Officer:* Captain S. J. PARKER, M.C., D.C.M.

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## MEMBERSHIP

Full particulars of Membership with alternative forms for Bankers' Orders and for Deeds of Covenant enabling the Institution to recover Income Tax can be obtained on application to "The Secretary, Royal United Service Institution, Whitehall, London, S.W.1."

Commissioned Officers of *all* H.M. fighting Services, including those of the Dominions, Colonies and India, and Midshipmen and equivalent ranks of the Royal Navy, Dominion Navies, Royal Naval Reserve and Royal Naval Volunteer Reserve, are eligible for membership without proposal or ballot.

Naval, Military and Air Force Cadets are eligible on the recommendation of their Commanding Officers.

Ladies whose names appear or have appeared in the Official Lists as serving or having served as officers with any of the three Services are eligible.

An Officers' Mess may subscribe to the JOURNAL, but is *not* eligible for membership.

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Officers of the Indian, Dominion and Colonial Naval, Military, and Air Forces temporarily in the United Kingdom may become members for a period of six months on payment of Ten Shillings and Sixpence, or One Guinea for twelve months. The additional subscription to the Lending Library is Five Shillings for six months.

## THE INSTITUTION

The Royal United Service Institution is situated just below the War Office in Whitehall. It has the best professional Library in the United Kingdom. The Reading and Smoking Rooms are provided with the leading papers, periodicals and writing materials.

The Institution is open daily from 10 a.m. to 7 p.m., except Sunday, Christmas Day and Good Friday.

## THE JOURNAL

The R.U.S.I. JOURNAL is published in February, May, August and November of each year, and sent post free to Members in any part of the world. Copies may be purchased by non-members, price 7s. 6d. Annual subscription £1 10s., post free. Orders should be sent to "The Secretary, Royal United Service Institution."

## THE MUSEUM

The R.U.S. Museum is open free to the Allied forces in uniform. Members may obtain passes for their friends on application to the Secretary.



## SECRETARY'S NOTES

### ANNIVERSARY MEETING

The Anniversary Meeting will be held at 3 p.m. on Tuesday, 4th March, 1947. The Council will present their Annual Report and Accounts, and there will be an election to fill the vacancies on the Council. Copies of the Annual Reports and Accounts for 1946 can be obtained on application to the Secretary.

The Council will ask for powers to increase subscriptions as from 1st January, 1948, should this be found necessary.

### COUNCIL

#### Resignation

General Sir Ronald Adam, Bart., G.C.B., D.S.O., O.B.E., has been compelled to resign on account of his other commitments.

#### Elected Members

Captain Rex Janson, V.D., R.N.V.R., has been elected as the Member representing the Royal Naval Volunteer Reserve in the vacancy caused by the resignation of Captain T. D. Manning, T.D., R.N.V.R.

Lieut.-General Sir Evelyn Barker, K.B.E., C.B., D.S.O., M.C., has been elected a Regular Army Member in the vacancy caused by the resignation of General Sir Charles Bonham Carter, G.C.B., C.M.G., M.C.

Marshal of the Royal Air Force Lord Newall, G.C.B., O.M., G.C.M.G., C.B.E., A.M., has been elected a Royal Air Force Member in the vacancy caused by the election to Air Chief Marshal Sir Robert Brooke-Popham, G.C.V.O., K.C.B., C.M.G., D.S.O., A.F.C., to be a Vice-President.

The following Members, having completed three years service, retire but offer themselves for re-election, for which they are eligible.

#### ROYAL NAVY

Captain W. W. Davis, D.S.O., R.N.

#### ROYAL NAVAL RESERVE

Commodore R. Harrison, D.S.O., R.D., R.N.R.

#### REGULAR ARMY

General Sir Charles Loyd, K.C.B., D.S.O., M.C.

#### TERRITORIAL ARMY

Colonel F. D. Samuel, C.B.E., D.S.O., T.D.

#### ROYAL AIR FORCE

Air Marshal Sir Norman Bottomley, K.C.B., C.I.E., D.S.O., A.F.C.

### NEW MEMBERS

The following officers joined the Institution during the period 13th November, 1946 to 31st, January, 1947.

#### ROYAL NAVY

Commander (S) R. M. Mere, R.N.V.R.

Midshipman T. F. B. Young, R.N.

Lieutenant J. F. Arnold, R.N.

Lieutenant P. B. Beazley, R.N.

Commander C. B. Brooke, R.N.

Admiral Sir Gerald C. Dickins, K.C.V.O., C.B., C.M.G.

Commander J. R. Gower, D.S.C., R.N.

Lieutenant A. L. Hutchinson, R.N.V.R.



Commander C. G. Pitcairn Jones, R.N.  
 Commander G. E. Marshall, R.N.  
 Constructor Commander J. F. Starks, R.N.  
 Commander B. W. Taylor, D.S.C., R.N.  
 Captain A. E. Toase, D.S.C., Royal Marines.  
 Commander A. H. Wallis, R.N.  
 The Marchioness of Cholmondeley, Superintendent, W.R.N.S.  
 Lieutenant G. A. M. Ritson, Royal Marines.  
 Commander G. N. Henson, R.N.  
 Lieutenant-Commander E. H. Lee, D.S.C., R.N.  
 Commander D. Vincent-Jones, D.S.C., R.N.  
 Captain R. A. Currie, D.S.C., R.N.  
 Lieut.-Colonel F. N. Grant, Royal Marines.  
 Major R. W. Madoc, Royal Marines.  
 Commander R. H. Stileman, R.N.  
 Major-General C. R. W. Lamplough, C.B.E., D.S.C., Royal Marines  
 Commander C. H. Holmes, O.B.E., R.N.  
 Colonel G. Rutledge, Royal Marines.  
 Commander (E) G. O. Naish, R.N.  
 Vice-Admiral Sir H. T. C. Walker, K.C.B.  
 Major-General G. E. Wildman-Lushington, C.B., C.B.E., Royal Marines  
 Lieutenant-Commander (E) L. E. S. H. Le Bailly, R.N.  
 Captain K. N. Humphreys, C.B., R.N.  
 Lieutenant B. H. Simpson, Royal Marines.  
 Lieutenant J. R. Stephens, R.N.  
 Lieutenant-Commander O. H. M. St. J. Steiner, R.N.

#### ARMY

Colonel H. D. Mountford, Royal Signals  
 Major H. S. Langstaff, Royal Artillery.  
 Major A. R. J. Hewitt, The Manchester Regiment.  
 Major M. A. C. Osborn, D.S.O., O.B.E., M.C., The West Yorkshire Regiment.  
 Lieut.-Colonel F. R. Grenyer, The Dogra Regiment, I.A.  
 Captain V. H. Wolfson, Royal Artillery.  
 Major The Hon. W. E. H. Lawson, Scots Guards.  
 Captain R. A. Russell, The Royal Fusiliers.  
 Captain J. L. Darell, M.C., Coldstream Guards.  
 Major E. C. W. M. Penn, M.C., Grenadier Guards.  
 Captain P. N. Bayley, The Gloucestershire Regiment.  
 Major E. F. J. Plowden, Royal Engineers (T.A.)  
 Major A. C. Morgan, D.F.C., Royal Artillery.  
 Major G. E. Vincent Jones, Royal Artillery.  
 Major G. B. Griffiths, The King's Shropshire Light Infantry.  
 Major K. O. Jones, I.E.M.E.  
 Major G. R. W. Stainton, M.C., Royal Artillery.  
 Brigadier R. Barrow, C.B.E., Royal Artillery.  
 Lieut.-Colonel R. G. L. Bowles, R.A.S.C.  
 Major H. A. Butler, The Rajputana Rifles, I.A.  
 Major C. D. K. Burnaby, Royal Artillery.  
 Captain A. F. L. Colson, M.B.E., Royal Engineers.  
 Brigadier P. H. Hansen, V.C., D.S.O., M.C., The Lincolnshire Regiment.  
 Captain M. A. Hooker, T.A.R.O.  
 Lieut.-Colonel G. F. Hutchinson, D.S.O., Royal Engineers.  
 Lieutenant L. E. A. Joseph, late 13th London Regiment.  
 Captain R. S. Langton, M.C., Irish Guards.



Lieut.-Colonel F. C. Leach, M.B., I.M.S.  
 Lieutenant G. V. S. Le Fanu, Coldstream Guards.  
 Captain R. Lucas, M.C., The Wiltshire Regiment.  
 Major M. H. McDougall, R.A.S.C.  
 Captain A. McLeod Morrison, M.C., 4/7th Royal Dragoon Guards.  
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 Lieut.-Colonel Rajendra Singh, 14th Punjab Regiment, I.A.  
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 Captain B. C. Chandler, The Queen's Own Royal West Kent Regiment.  
 Lieut.-Colonel T. K. Mukerji, Indian Signal Corps, I.A.  
 Lieut.-Colonel J. R. L. Rumsey, The Rajputana Rifles, I.A.  
 Brigadier A. T. Cornwall-Jones, O.B.E., 5th Royal Gurkha Rifles, (FF)  
 Captain B. R. Herbert, Royal Artillery.  
 Lieut.-Colonel H. W. McCall, C.M.G., D.S.O., late The Green Howards.  
 Lieut.-Colonel J. B. Girling, The Green Howards.  
 Major H. Hayward-Surry, The Burma Rifles, I.A.  
 Major W. A. W. Price, Royal Indian Artillery.  
 Major J. M. Williams, Royal Artillery.  
 Brigadier R. Gardiner, C.B.E., Royal Engineers.  
 Brigadier R. C. Cottrell-Hill, C.B.E., D.S.O., M.C., The Border Regiment.  
 Major R. Green, The East Lancashire Regiment.  
 Lieutenant P. R. Bowring, The Bedfordshire and Hertfordshire Regiment.  
 Lieut.-Colonel R. T. Barr, O.B.E., R.E.M.E.  
 Captain R. H. Epps, General List.  
 Major H. S. Long, 25th Dragoons, R.A.C.  
 Captain D. Ruttledge, The Duke of Cornwall's Light Infantry  
 Major B. E. Newman, R.E.M.E.  
 Brigadier W. G. Roe, C.B.E., R.A.S.C.  
 Colonel M. Hayaud Din, M.B.E., Indian Army.  
 Major Rab Nawaz, 2nd Punjab Regiment, I.A.  
 Captain W. A. Taylor, The Royal Fusiliers.  
 Major H. I. Ahmad, Scinde Horse, I.A.  
 Major Julian Coyne, Royal Artillery.  
 Major A. K. Steel, The East Surrey Regiment.  
 Major J. F. Miller, Royal Tank Regiment.  
 Captain R. J. K. Knatchbull-Hugesson, 3rd Dragoon Guards.  
 Captain H. H. G. Woollford, R.E.M.E.  
 Major J. E. Merryweather, Royal Artillery.



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 Group Captain J. G. Cardale, R.A.F.  
 Squadron Leader J. W. May, D.F.C., R.A.F.  
 Wing Commander F. G. C. Gilbert, R.A.F.  
 Squadron Leader E. L. McMillan, R.A.F.  
 Wing Commander C. M. S. Gardner, O.B.E., D.F.C., R.A.F.  
 Squadron Leader O. Gradon, R.A.F.  
 Group Captain R. Hiscox, O.B.E., R.A.F.  
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 Wing Commander A. G. T. James, O.B.E., R.A.F.  
 Wing Commander T. L. Mann, R.A.F.  
 Squadron Leader W. J. Nightingale, R.A.F.  
 Group Captain G. H. H. Proctor, R.A.F.  
 Wing Commander E. B. Beauman, R.A.F.  
 Squadron Leader E. J. Cutler, O.B.E., R.A.F.  
 Squadron Leader M. K. Forter, R.A.F.V.R.  
 Squadron Leader A. A. N. Nicholson, R.A.F.  
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 Squadron Leader I. R. Campbell, R.A.F.  
 Wing Commander A. D. Pantou, D.F.C., R.A.F.  
 Group Captain C. D. C. Boyce, C.B., C.B.E., R.A.F.  
 Wing Commander S. H. Latham, R.A.F.  
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 Wing Commander R. T. F. Gates, D.F.C., A.F.C., R.A.F.  
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 Squadron Leader J. R. Brown, D.F.C., R.A.F.  
 Wing Commander O. H. D. Blomfield, R.A.F.  
 Air Vice Marshal G. Combe, C.B.  
 Wing Commander D. S. MacDonald, D.S.O., D.F.C., R.A.F.  
 Flying Officer D. A. Langdon, R.A.F.  
 Squadron Leader W. G. Ahern, R.A.F.  
 Wing Commander T. C. Hobbs, M.C., R.A.F. Regiment.  
 Group Captain P. W. Johnson, D.S.O., D.F.C., A.F.C., R.A.F.  
 Wing Commander S. G. Walker, O.B.E., R.A.F.  
 Wing Commander J. A. Robinson, O.B.E., R.A.F.

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The Council hope that many more Members will support the Scheme for Covenanted Subscriptions, details of which have been circulated to all Members.

This materially assists the Institution because it enables Income Tax at the full current rate to be reclaimed on each subscription.

To date, 596 Annual and 145 Life Members have signed the necessary Deeds.

Any Member who has not received his copy of the Scheme or who requires new forms is requested to communicate with the Secretary.



LIAISON OFFICERS

The following are now acting as Liaison Officers for the Institution with the principal Commands and Establishments :—

NAVY

<i>Establishment or Command</i>	<i>Name</i>
Home Fleet ... ..	Lieut.-Colonel R. F. Cornwall, O.B.E., R.M.
Admiral (Air) ... ..	Captain H. A. Traill, O.B.E., R.N.
Admiral (Submarines) ... ..	Commander P. J. Cowell, D.S.C., R.N.
R.N. College, Greenwich ... ..	Captain R. H. Gwyn-Williams, R.M.
F.O.I.C. Rosyth ... ..	Commander T. Yeoman, O.B.E., R.N.
Combined Operations Headquarters ... ..	Commander R. M. Aubrey, D.S.C., R.N.
School of Combined Operations Fremington	Lieutenant-Commander H. H. Mulleneux, D.S.C., R.N.
H.M.S. "Excellent" ... ..	Lieutenant-Commander J. G. Wells D.S.C., R.N.
H.M.S. "Vernon" ... ..	Lieutenant-Commander A. Gray, D.S.O., R.N.
H.M.S. "Mercury" ... ..	Lieutenant-Commander P. W. W. Graham, R.N.
R.N. Barracks, Chatham ... ..	Lieutenant-Commander L. J. H. Gamble, D.S.C., R.N.
R.N. Barracks, Portsmouth ... ..	Lieutenant-Commander A. J. R. White, D.S.C., R.N.
R.N. Barracks, Devonport ... ..	Instructor Lieutenant-Commander C. J. Pickerell, R.N.
R.M. Barracks, Chatham ... ..	Major R. R. G. Hoare, R.M.
R.M. Barracks, Eastney ... ..	Captain I. S. Harrison, R.M.
R.M. Barracks, Plymouth ... ..	Captain P. L. Mackay, R.M.
R.M. Depot, Deal ... ..	Captain T. N. Congdon, R.M.
R.M. Commando Group, Faringdon ... ..	Major I. De'ath, D.S.O., M.B.E., R.M.

ARMY

2nd Anti-Aircraft Group ... ..	Major-General A. H. Hornby, C.B., C.B.E., M.C.
Eastern Command ... ..	Lieut.-Colonel J. Sorel-Cameron, D.S.O.
London District ... ..	Major T. A. Gore-Browne.
Northern Command ... ..	Lieut.-Colonel H. R. R. Conder, O.B.E.
Northern Ireland District ... ..	Major J. M. Arengo-Jones.
Scottish Command ... ..	Lieut.-Colonel W. D. Ponting.
Southern Command ... ..	Lieut.-Colonel F. Johnstone, D.S.O., O.B.E.
Western Command ... ..	Major J. A. B. Dickson.
India Command ... ..	Lieut.-General Sir Francis Tuker, K.C.I.E., C.B., D.S.O., O.B.E.
A.L.F.S.E.A. ... ..	Lieut.-Colonel H. O. Fraser, O.B.E.
B.A.O.R. ... ..	Lieut.-Colonel R. E. Osborne-Smith, D.S.O.
B.T.A. ... ..	Brigadier R. H. Hewetson, C.B.E., D.S.O.
C.M.F. ... ..	Lieut.-Colonel C. I. H. Dunbar, D.S.O.

R.A.F.

Bomber Command ... ..	Wing Commander A. P. Campbell, C.B.E.
Fighter Command ... ..	Wing Commander J. H. Iremonger, D.F.C.
Coastal Command ... ..	Group Captain J. E. G.-H. Thomas, D.F.C., R.A.F.
Flying Training ... ..	Wing Commander A. R. D. McDonnell, D.F.C.
Technical Training ... ..	Wing Commander W. M. Bisdée
Maintenance Command ... ..	Wing Commander J. B. Altham.
Transport Command ... ..	Wing Commander A. G. T. James, O.B.E.
S.E.A.C. ... ..	Group Captain E. J. Corbally, C.B., C.B.E.
India Command ... ..	Air Vice Marshal R. S. Blucke, C.B., C.B.E., D.S.O., D.F.C.



**EARDLEY-WILMOT MEDAL COMPETITION**

The competition for the medal instituted by the late Rear-Admiral Sir Sydney M. Eardley-Wilmot will take place this year.

The medal will be awarded for the best essay contributed by a Member of the Institution on :—

"Changes in Naval Warfare owing to new and modified weapons."

Essays must be typed in triplicate, and each copy must be clearly marked "Eardley-Wilmot Competition" on the outside. Care should be taken to avoid confidential matter. When a reference is made to any work, the title of such work must be quoted.

Essays must be strictly anonymous, and each must have a Motto, which must be written on the outside of each copy. They must be accompanied by a sealed envelope with the Motto written on the outside, and the competitor's name inside.

All essays must be sent by registered post, addressed to the Secretary, Royal United Service Institution, Whitehall, London, S.W.1, and must reach the Institution not later than 15th November, 1947.

**MEDAL AND PRIZE**

A silver-gilt medal will be awarded for the best essay, and if it merits publication the writer will also receive a suitable monetary award.

Any essay written by a serving officer will be submitted for official sanction before it is published.

All essays submitted for this competition will become the absolute property of the Council.

**JOURNAL**

Members are invited to offer suitable contributions for the JOURNAL. Confidential matter cannot be used, but there is ample scope for professional articles which contain useful lessons of the War; also contributions of a general Service Character, such as Strategic Principles, Command and Leadership, Morale, Staff Work, Naval, Military and Air Force history, customs and traditions.

The Editor is authorized to receive articles from serving officers, and if found suitable, to obtain permission for their publication from the appropriate Service Department. Army officers are reminded that such articles must be accompanied by the written approval of the author's Commanding Officer.

**CHANGES OF ADDRESS**

Members are particularly requested to notify any change of address which will affect the dispatch of the JOURNALS.

**Naval Officers' Addresses**

Naval Officers are strongly advised to keep the Institution informed of their address as JOURNALS sent to them via C.W. Branch of the Admiralty are invariably greatly delayed.

**MUSEUM**

**War Relics.**—Members and others interested in the R.U.S. Museum are requested to keep a look-out for war relics. Considerations of space preclude the acceptance of anything except small articles of particular historic interest. Personal relics of special distinction will be very acceptable.

**ADDITIONS**

Coloured Italian propaganda post-card. Given by Lieutenant-Commander D. Jermain, D.S.C., R.N.



Dirk worn by Vice-Admiral Sir Cecil Harcourt, K.C.B., C.B.E., when a Midshipman. Given by Vice-Admiral Sir Cecil Harcourt, K.C.B., C.B.E.

Field Dressings of the Wars of 1914-18 and 1939-45. Given by the Rev. G. Hawkes-Field, H.C.F.

Photographic copy of the Instrument of Surrender by the Japanese to the Supreme Allied Commander, South East Asia Command at Singapore on 12th September, 1945, and the pen used to sign it. Given by Admiral the Viscount Mountbatten of Burma, G.C.V.O., K.C.B., D.S.O., A.D.C.

Signs which were worn on vehicles in the Middle East between September, 1939 and August 1945, mounted on a board. Given by Major-General L. O. Lyne, C.B., D.S.O., Director of Staff Duties, War Office.

Queen's South African Medal with clasps Talana and Ladysmith belonging to Corporal J. Cathcart, Royal Dublin Fusiliers. Given by Pensioner J. Cathcart.

Flag flown by Lord Jellicoe in H.M.S. "Iron Duke." Transferred from St. Paul's Cathedral by permission of the Dean and with the concurrence of the Viscount Jellicoe and the Dowager Lady Jellicoe,

Watch worn by Flight Lieutenant D. Hornell, V.C. Given by the Air Ministry.

Medal struck by the Axis powers in anticipation of a celebration of final victory in North Africa. Given by Captain D. C. T. Venn, M.B.E.

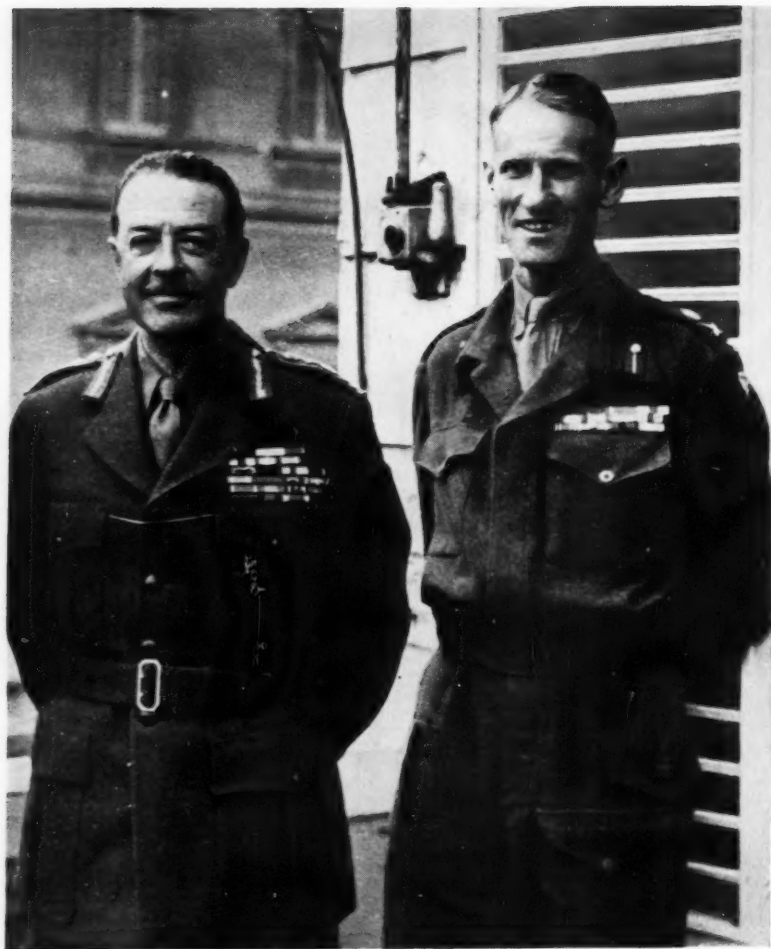
#### EXHIBITS FOR SALE

The Museum Committee, in the course of reviewing the contents of the Museum in order to make room for new acquisitions, have decided, with the approval of the Council, that certain articles which have become redundant or are duplicates shall be disposed of.

In cases where these might be of interest to Regimental Museums they are being offered on long loan. Other items of less value or lacking military association will be sold. Members who may be interested in their acquisition are invited to send inquiries to the Curator with their offers. The articles enumerated below can be inspected on application to the Curator :—

- 192 Lock from Gate of Powanghur Fort.
- 213 )
- 2097 )
- 2098 ) Russian Eikons.
- 2099 )
- 2100 )
- 2343 )
- 640 Engraving "Like coachman like cause."
- 854 Four Dollar Bills used by the Southern Army in American Civil War.
- 1497 Indian Juggler's Sword.
- 2637 Two Russian percussion Muskets from Crimea (with bayonets).
- 6775 Two Chinese Mortars (ancient).
- 6789 Chinese trench Mortar. Boxer Rebellion relic.
- 7332 Two gilded stone images of Buddha.
- 7336 Marble statue of a Nymph with dog.
- 8708 Several Indian Tulwars and an Indian dagger.
- 9069 Pair of Carved horns from South Africa.
- 506 Model of a Baltic Schooner made by a Russian prisoner of war from tortoiseshell and ivory.





**FIELD-MARSHAL THE HON. SIR HAROLD R. L. G. ALEXANDER,**  
**G.C.B., C.S.I., D.S.O., M.C., A.D.C.**  
**SUPREME ALLIED COMMANDER MEDITERRANEAN THEATRE**  
**WITH**  
**LIEUT.-GENERAL SIR RICHARD L. McCREERY,**  
**K.C.B., K.B.E., D.S.O., M.C.**  
**G.O.C. EIGHTH ARMY**



# THE JOURNAL *of the* Royal United Service Institution

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No. 565.

[Authors alone are responsible for the contents of their respective Papers.  
All communications, except those for perusal by the Editor only, should  
be addressed to the Secretary, Royal United Service Institution.]

## THE FINAL OFFENSIVE IN ITALY

By LIEUT.-GENERAL SIR RICHARD L. MCCREERY, K.C.B., K.B.E., D.S.O., M.C.

On Wednesday, 27th November, 1946, at 3 p.m.

LIEUT.-GENERAL SIR OLIVER W. H. LEESE, K.C.B., C.B.E., D.S.O.,

in the Chair

THE CHAIRMAN: I know that General Sir Richard McCreery needs no introduction. There is no person more fitted to talk to us to-day about the final stages of the offensive in Italy than General McCreery, who was with the 10th Corps on the Salerno beaches and at Monte Cassino. He next commanded the Eighth Army during the Winter fighting which paved the way for the highly successful campaign which he is going to tell us about to-day. I know you are just as keen as I am to hear him, so I will ask him to get on with his talk.

### LECTURE

THE situation of the Allied armies in Italy in the Winter of 1944-45 was as follows. The Eighth Army continued to carry out offensive operations right up to Christmas 1944. As in 1943, the Autumn months had been extremely wet. In October there had been eight inches of rain; in November there were no less than nine inches. Rivers frequently rose ten feet or more in a few hours, washing away Bailey bridges or preventing bridging operations, and sometimes cutting off the leading troops on the far side of the water.

The axis of the Eighth Army attacks had been N.W. up Route 9, the famous Via Emilia of Roman times; and four big rivers had been crossed—the Savio, the Ronco, the Montone and the Lamone. Farther North, the Canadian Corps early in December captured Ravenna, and by Christmas they had cleared the country up to Lake Comacchio and the River Senio. On their left the 5th Corps had also reached the Senio, as had the Poles in the hills South of Route 9.<sup>1</sup>

During the Winter the Eighth Army took over command of the 13th Corps, which for a long time had been under the command of the United States Fifth Army. The left of the Eighth Army front therefore became the hill mass of Monte Grande, some fifteen miles South-East of Bologna. This hill 1750 feet high, had been captured by American troops in the Autumn when the Fifth Army was battling forward down the northern slopes of the Apennines and when they were finally halted due to heavy casualties, exhaustion and the terrible weather on the very last ridge overlooking the Po plains, Monte Grande-Monte Adone. By Christmas, 1944, the

<sup>1</sup> See Map facing p. 16. A



Eighth Army had therefore captured a big wedge in the South-East corner of the Po plains; but the Fifteenth Army Group, which had been taken over by General Mark Clark in November when Field-Marshal Alexander became Supreme Allied Commander in the Mediterranean, had failed to capture Bologna or drive the enemy back to the River Po.

#### THE WINTER HALT

A stop to offensive operations had now become essential because :—

1. Most of the divisions of the Eighth Army had been attacking in difficult country ever since 25th August, when the Gothic Line battles had begun, with only short pauses out of the line. Some had had very heavy casualties; for instance in the Gothic Line battles the 56th London Division had 6,000 casualties in September and had been reduced to two brigades.
2. There was a serious artillery ammunition crisis. It was estimated that there was sufficient 25-pdr. ammunition to carry out one further major attack—in other words, to get from the Senio to the Santerno.
3. The Eighth Army was very short of infantry reinforcements after the heavy casualties of the Gothic Line battles. It had been impossible to absorb reinforcements properly and train them into teams. The Fifth Army was in a very similar state. Four U.S. divisions in the attacks towards Bologna had each suffered some six thousand casualties in these Autumn months.
4. The Eighth Army had lost several divisions: the 4th Division and the 46th Division to Greece, and the Canadian Corps, with the 1st Canadian Infantry Division and the 5th Canadian Armoured Division to North-West Europe.

It was also clear that the Germans intended to fight for every river line and canal. Although the local German commanders undoubtedly would have preferred a withdrawal, Hitler was still reluctant to give up a yard of ground in Italy. The chief reason, therefore, for continuing to attack, in order to hold the maximum German forces in Italy, was now not so urgent. However, I believe that the Chiefs of Staff were disappointed when the Supreme Commander gave his reasons for going on to the defensive. Their first reaction was: "The best form of defence is to attack!"

#### REST, TRAINING AND REINFORCEMENTS

It was therefore, decided to go on to the defensive along the whole front, and to plan the final big offensive as early as possible in the Spring to drive the Germans out of Italy—or better, to destroy his armies South of the River Po. The pause was made good use of. The two Polish divisions, which up till now had only two infantry brigades, each formed a third brigade, largely as a result of incorporating Poles who had been captured in the German Army. The 2nd New Zealand Division also formed a third infantry brigade; until now the Division had had two infantry and one armoured brigade. And the 56th Division was given the 24th Guards Brigade, again bringing it up to a three-brigade division. By using Italian troops—by the end of March three Italian *gruppo* were with the Eighth Army—it was possible to give each division a month out of the line for rest and training.

Intensive training also went on with the 25th Armoured Engineer Brigade, which was newly formed, and with specialized equipment which had never before been used in Italy—Kangaroos, Buffaloes and Flails.



## THE WEATHER

In northern Italy there is often little rain early in the year, even a Winter drought. Normally, however, in April the rainfall increases, and the thawing of the snow in the Alps causes the rivers to run very high in April and May. For once, however, "Sunny Italy" really lived up to its name! It was remarkable that from 27th January, 1945, there was no appreciable rain until after the offensive was well under way. The whole of the Alps had a very light snowfall in the Winter of 1944/45, therefore the Spring thaw made the rivers rise much less than usual. The same applied to the smaller rivers fed by the Appenines. This exceptionally dry Spring weather was amazing good luck, but luck that was well deserved by the veterans of the Eighth Army, who had had two such grim Winter campaigns in Italy.

## FIFTEENTH ARMY GROUP PLAN

General Clark's plan was to destroy the German armies South of the River Po by a pincers movement, the Eighth Army advancing on the general axis of Route 16 to Ferrara and Bondeno and the U.S. Fifth Army attacking North through Bologna to the Po about Ostiglia. The Fifth Army was then to exploit to Verona—Lake Garda to cut off the whole of the Axis forces in North-West Italy, and the Eighth Army was to cross the Po and drive north-eastward towards Venice and Trieste.

To enable the maximum use to be made of the Allied air forces, the Army attacks were to be staggered. The Eighth Army was to attack at least three days before the Fifth Army. General Clark also hoped that the Eighth Army attack would draw off any enemy reserves from the Fifth Army front. He regarded the Fifth Army attack as the main effort.

## GROUND

The difficulties of ground confronting both armies were great. The Eighth Army in the Po plain had several rivers with high flood banks to cross; the Senio, the Santerno, the Sillaro and the Idice were the chief ones. These all ran into the big river Reno, which was some fifty yards wide. There were also innumerable canals and irrigation dykes. On our right flank Lake Comacchio was only a few feet deep; in fact, due to the Spring drought, at the time of the attack the lake was exceptionally low and many mud flats were appearing above water. The Germans had flooded large areas on each side of the Argenta gap. The gap astride Route 16 for some miles North of Bastia was only some 4,000 yards wide: in this defile a strong defensive system had been built up of minefields, entrenchments and defended villages.

The hinge of the whole German defensive system was clearly the Bastia-Argenta gap. North of the Po the enemy had completely prepared another strong and much shorter line, the "Venetian" line between Lake Garda and the Adriatic. It is truly surprising that a withdrawal had not been made earlier to this economical position, but such a withdrawal was inconsistent with Hitler's strategy, and importance was still attached to the industrial and food supplies of Northern Italy.

The Fifth Army was confronted by an enemy with very strong mountain positions, where he had had many months to prepare and strengthen his defences. On the other hand, once this first precipitous mountain ridge had been captured, the ground fell rapidly towards Bologna, and North of Route 9 the Americans would be able to exploit northwards between the rivers, rather than having to cross them, until the Po was reached. General Truscott, who commanded the Fifth U.S. Army would also have a big administrative problem to keep the momentum of the advance going with fifty miles of difficult mountain roads behind his leading troops.



With Italian and other slave labour, the enemy had honeycombed the flood banks of every river and canal with field works. The River Senio was never intended to be any "Winter line"; in fact, the enemy defences on the rivers Santerno and Idice were much stronger than on the Senio.

#### GERMAN FORCES IN ITALY

When the Allied offensive started, the enemy still had twenty-one divisions in Italy. Because of the bombing of his lines of communication through the Alps, the Germans had only been able to withdraw three divisions and some five parachute battalions since the start of the great Russian offensive. On 9th April, 1945, he had in the line sixteen German and one Italian Republican division, with two good German divisions in reserve, and the remainder of his troops up in North-West Italy. The enemy was very thin on the ground in the mountainous western sectors, but held strongly from South of Bologna to Lake Comacchio.

The German divisions in Italy had often had a hammering, but since Christmas they had had three months to train, obtain some rest, and absorb reinforcements. They were now well up to strength, and some of the best divisions in the German Army remained in Italy—notably the 1st Parachute Division, 90th Panzer Grenadier Division, 26th Armoured Division and 29th Panzer Grenadier Division. On the other hand, German air support was very weak and spasmodic, although the enemy was well supplied with A.A. artillery, particularly on the Tenth Army front. He also had plenty of field and medium artillery, and a large number of self-propelled guns, which partly made up for his great numerical inferiority in tanks. He had some two hundred and fifty tank runners.

General von Vietinghoff had taken over command of Army Group South-West with the 10th and 14th Armies, when Kesselring moved to Germany. The British Eighth Army had the German 10th Army with the 76th Panzer Corps and 1st Parachute Corps opposing them, with eight divisions in the line and two in reserve.

#### THE EIGHTH ARMY AT THE START OF THE OFFENSIVE

The Eighth Army was an army of veterans with :—

- One armoured division.
- Three independent British armoured brigades.
- Two British infantry divisions.
- Two Indian infantry divisions.
- 43rd Gurkha Brigade.
- 2nd New Zealand Division.
- The Jewish Brigade.
- 2nd Commando Brigade.
- 2nd Parachute Brigade.
- 2nd Polish Corps (two infantry divisions, one armoured brigade).
- Three Italian *gruppo* (each of two infantry brigades).

Well might the Prime Minister say, as he did after the battle : " Never, I suppose, have so many nations advanced and manœuvred in one line victoriously." It is surely a tribute to the spirit of comradeship which develops in war that the Eighth Army, composed of so many different nations, could fight as one big team. If only the same spirit could be maintained in times of peace!

I had had some anxieties during the preparatory period. First, there was the primary consideration that another great battle, with its inevitable losses, had to be



fully justified. Many soldiers who had fought for years must have felt that they had more than done their share, and that a short campaign in Germany would finish the war. However, I am sure that the final offensive in Italy was necessary. With two unbeaten armies left in Italy, the Germans would have been able to start a legend of never having been really beaten. The enemy could also have caused trouble for a considerable time with divisions from Italy in his "National" or "Alpine Redoubt."

Right well did the veterans of the Eighth Army, the "D-day Dodgers," respond to the call. The last great battle in Italy will always remain as a wonderful example of the fighting spirit and determination of the Empire's soldiers.

A second worry, however, was that the decisions taken at Yalta about Poland very much upset General Anders and many of the officers and men of the 2nd Polish Corps. General Anders was a great leader and one to whom every soldier in the Corps looked for inspiration. Without the 2nd Polish Corps it would have been difficult for the Eighth Army to carry out any major attack—there would have been insufficient forces. However, after some days of great mental strain, General Anders decided that it was the duty of his soldiers to stand by their Allies and defeat the Germans, and his Corps played a great part in the coming battle.

#### THE COVER PLAN

The Germans naturally knew that an Allied offensive was certain in the Spring, but we worked to make him think that it could not start early in April. His fears for his sea flanks were also played up. It was interesting that the Germans throughout the Italian campaign always thought that the Allies would do more in the way of sea hooks. Our preliminary operations before the main attack helped to increase this fear for his Adriatic flank, and a few days before the battle he actually moved one of his best divisions North of the River Po. Locally the Germans were led to believe that any Eighth Army attack when it came would continue on the axis of Route 9, like the Autumn attacks. In the end I think a large measure of tactical surprise was attained. General Herr, who commanded the Tenth Army, had urged von Vietinghoff that he should withdraw from the Eighth Army front to the River Santerno just before the estimated time of our attack. Von Vietinghoff thoroughly agreed, but this "false front" manoeuvre was at once vetoed by Hitler; he still had the obsession that the Germans would not fight so well if ground was given up voluntarily.

#### PRELIMINARY OPERATIONS AND FINAL PREPARATIONS

The biggest problem for the Eighth Army was how to force the extremely strong Argenta gap. We hoped to make use of Buffaloes on Lake Comacchio and the flooded country South of the lake to help outflank the position, but it was necessary first to turn the enemy off the long spit of land between the lake and the sea. The risk of losing some degree of surprise for the main attack had to be taken; in any case this preliminary operation helped the cover plan of drawing attention to the Adriatic sea flank.

Last minute training with the Buffaloes, or Fantails as we called these vehicles in Italy, was carried out in the swampy country North-East of Ravenna in conditions similar to those we thought we would find at Lake Comacchio. It was a rush against time for the R.A.C. and crews, who soon became very proficient drivers.

The attack of the 2nd Commando Brigade on the spit was carried out with great determination and gallantry on the night of 1/2nd April with complete success.



Great difficulties were overcome. The Buffaloes got stuck in the mud of Lake Comacchio; but two Commandos landed many hours behind time just before daylight on 2nd April on the West shore of the spit from assault boats and storm boats. Each storm boat had towed two assault boats across the lake; even these boats had had to be carried up to a mile, with men wading through mud up to their knees before the boats could be floated. After a night of this work, fighting continued all day. Another Commando landed from the sea flank, which meant that the artillery support from some seven field regiments and two medium regiments was intricate and difficult to arrange. The artillery support proved extremely effective. By 3rd April the whole of the spit up to Porto Garibaldi, with nearly a thousand prisoners from the Turkoman Division, over half of them German, was in our hands.

The other preliminary operation, again to assist in outflanking the enemy in the North, was to turn the line of the Reno by getting a firm base on "the wedge" before the main attack. This attack was carried out by the 56th Division on the night 5/6th April. By early 7th April we had a good bridgehead up to the Canale Umana, with a bridge over the Reno ready for the next right hook.

This operation again had heavy artillery and fighter bomber support, and after it several regiments had to move into their battle positions for the main attack.

Our chief anxiety immediately before the battle was whether the enemy would pull out to the Santerno. There seemed so many strong reasons why he should do this and upset all our preparations. We now know that only Hitler's obstinacy stopped this local withdrawal. However, the artillery part of it was carried out when some six thousand shells were fired during the night 5/6th April, chiefly on our forward artillery areas. Hardly any damage was done, because the majority of our guns were in new positions and silent ready for our attack. The Germans learned nothing from this heavy bombardment, because only guns from positions known to the enemy replied. It was a relief, however, to find the Germans still in strength on the banks of the Senio the following morning.

On the other flank the Americans carried out a preliminary operation which led to the capture of Massa, when the enemy lost the last remains of his Gothic line positions. He reacted unexpectedly strongly in view of the deep mountain mass in front of the Americans in this area. A battle group of the 90th P.G. Division was actually sent to reinforce this sector. Again he was apparently nervous of a sea hook.

#### THE EIGHTH ARMY PLAN FOR THE ATTACK

The main attack on a two corps front—5th Corps on the right and 2nd Polish Corps on the left—was to capture a bridgehead over the River Santerno to include Massa Lombarda. From this bridgehead, the main effort of the Eighth Army was to be either North through the Argenta gap or North-West towards Budrio, in conjunction with the American attack on Bologna. The operations on the right flank to try and outflank the Argenta gap were to be undertaken by the 56th Division and 2nd Commando Brigade with the assistance of Italian partisans, who were very active in this area. The use of the 2nd Parachute Brigade was also planned for. South of the main attack, the 10th Corps, with the Jewish Brigade and Italian troops, were to carry out deception South of Route 9, and the 13th Corps was to hold Monte Grande firmly as a pivot and be prepared to move round to reinforce a thrust in the Po plain if necessary.

The corps commanders were General Keightley, 5th Corps; General Bohusz-Szyszko, 2nd Polish Corps; General Hawkesworth, 10th Corps; and General Harding, 13th Corps.



Even if the attacks through the Argenta gap went well, General Clark wished the thrust to continue towards Budrio to assist the Fifth Army operations. Therefore, when these attacks diverged, it was clear that one corps would probably concentrate on the Argenta gap and another on the right flank of the Fifth Army.

Throughout the battle the Eighth Army would have the support of the finest Tactical Air Force in the world—the Desert Air Force—with years of experience behind it. For the two or three days before the Fifth Army attacked, the Eighth Army also had the support of a very large force of heavy bombers from the Fifteenth Air Force and a large force of medium bombers from General Cannon's Tactical Air Force, in addition to fighter-bombers which normally supported the Fifth Army.

For the first time we also had a large night bomber effort. The night bombers played a big part in giving the enemy no rest, in delaying and disorganizing the movement of reserves, and in the bombing of key points such as Argenta and the Po crossings.

Great emphasis was laid on keeping up the pressure by night and day once the offensive had started. To help this, orders were issued that full advantage must be taken of the low state of the rivers and the drying ground to do initially the quick Royal Engineers job to cross the obstacles, with armoured dozers and low level Bailey, to get across the first tanks and other supporting arms. Later, high level, more permanent Bailey bridges were erected. The New Zealand Division developed this technique, and had very few casualties by carrying out the bridging operations almost at water level, between the high flood banks. "Arks" were generally kept for the smaller canals which were frequently met during the advance.

#### THE PROBLEM OF THE SENIO DEFENCES

The Senio defences were formidable. For some weeks before the attack there was much discussion as to whether it was advisable to advance our line to include the East bank of the river throughout its length. In many places, particularly on the front of the 2nd Polish Corps, our forward posts were as much as half-a-mile back from the river, and even farther North the Germans were generally holding the East bank and we were holding farms some few hundred yards back. There is no doubt that if we had had sufficient troops we should certainly have closed up to the East bank and held it, but to do so along the whole Army front would have involved divisions in considerable local operations, and in some sectors where we had reached the East bank it was found that holding it involved units in considerable casualties. On the other hand in many places where we held the East bank our men enjoyed the grenade duels which went on, and morale was considerably raised. In the end it was decided, as we could not do so all along the front, not to move right up to the East bank to avoid prejudicing surprise. Where an attacking division had the East bank in its possession at zero hour it proved a great advantage, as in the case of the 2nd New Zealand Division. Reconnaissance of the river line between the flood banks was easy; the obstacle was halved; minefields on the East bank were cleared, and ramps made for flame throwers to enable them to get their maximum range.

#### OUTLINE PLAN FOR THE MAIN ATTACK

Zero hour for the infantry to cross the river was 7.20 p.m.—about one hour before dark—when some 150 Wasps and Crocodile flame throwers advanced to flame the the river banks.



Preliminary air and artillery bombardment started at 1.30 p.m. on 9th April, with 700 heavy bombers laying a carpet of fragmentation bombs about three thousand yards West of the river on the front of the 2nd Polish and 5th Corps. Lugo was not bombed. For this new use of the heavy bombers in Italy in close support of the ground forces, every navigational aid was employed and most of the bombing was extremely accurate.

Weather conditions were good. Unfortunately one group of twenty-one heavies, owing to a mistake by the leader, bombed some five thousand yards short and caused over 200 casualties to one Polish infantry battalion who were thick on the ground ready for their attack. This brought out the devastating nature of this form of attack when troops are caught in the open.

After the heavies, the artillery softening programme started from over 1200 guns on to the river line defences, farms, strong points, villages and the enemy's guns. This artillery programme was arranged in five intensive periods of about twenty minutes each, and in the intervals large forces of fighter-bombers carried on the attacks, and many squadrons of medium bombers attacked the enemy's main gun areas and headquarters. This programme went on up to H-hour, when the last squadrons of fighter-bombers came over flying along the river line making dummy runs. This was most effective in keeping the enemy in his deep trenches during the time our troops closed up to the river and whilst they crossed.

As the attack went in, a standing barrage was put down about three hundred yards West of the river and, after crossing, the attack went on under a barrage during the night.

H-hour was selected to give enough light to the infantry to tackle the river obstacle and subsequently the maximum of night for bridging operations and to enable a sufficient build up of tanks and heavy weapons to be made West of the river before first light to meet the enemy's inevitable counter attacks.

The attack went very well. The 8th Indian Division attacked North of Lugo on a two-brigade front; the 2nd New Zealand Division attacked across the big bend of the river West of Cotignola, after which the division had to make a big wheel to the left. In this way Lugo was pinched out and each division would drive on the following day to the Santerno. The 78th Division in between was to mop up Cotignola. The 2nd New Zealand Division, the only division in complete possession of the near bank of the river, had extremely light casualties. The left brigade of the 8th Indian Division had very hard fighting. Along this division's front both banks of the river had to be crossed as one operation. Many German machine gunners came to life in the flood banks long after the leading troops had crossed, and caused many casualties. Each post had to be dealt with, and this caused delay. Low level bridges were made extremely quickly, and tanks and anti-tank guns were up with the infantry by first light.

The first objective, the Canale del Lugo was captured, but on the right the Germans fought very hard just beyond at the Tratturo stream and held up the 8th Indian Division there during most of the day on 10th April. On the left, after the seven hundred heavies had again laid a carpet of bombs some 3,000 yards ahead of our forward troops, the 2nd New Zealand Division advanced about 1.30 p.m. and by last light had reached the Santerno—a very fine advance in twenty-four hours.

On the left the 2nd Polish Corps who, you will remember, started farther back from the river, had greater difficulties in crossing to secure their first bridgehead at



Solarolo. During this period the 2nd New Zealand Division had to take special measures to watch their open left flank. But after the bombing by the heavies on 10th April, the Polish attack gathered speed and reached the River Santerno near Mordano by the evening of 11th April. The 8th Indian Division on the right reached the Santerno by first light 11th April.

The attacks to gain a bridgehead over the River Santerno started with the 2nd New Zealand Division early on 11th April, and that night the 8th Indian Division also secured a small bridgehead over the river. During the night the 2nd New Zealand Division cleared Massa Lombarda and the 78th Division, from reserve, passed one brigade through the 8th Indian Division during the afternoon of 12th April. This brigade, the 36th, pushed on during the night with tanks with great success in a northerly direction. A big bridgehead over the River Santerno was now in our hands and the first phase was over.

#### OPERATION TO FORCE THE ARGENTA GAP

Although the Buffaloes had failed in Lake Comacchio, I hoped they would operate better on the flooded ground South of the lake. After the capture of the wedge, tests proved encouraging and on 11th April, the 169th, The Queen's Brigade of the 56th Division, captured Menate in a very successful operation. The Germans were undoubtedly surprised by this advance of some six miles. One battalion, loaded in Buffaloes, passed right across the flooded ground during the night, and a Commando protected the right flank by moving along the bund on their feet along the southern shore of the lake. The chief trouble now for the 56th Division was their very difficult axis—the very poor road running along a bank above the floods North of the River Reno.

Meanwhile the enemy was falling back steadily in front of the Cremona *Gruppo* South of the River Reno where he was now in a big salient. This Italian *gruppo* was fighting with great gallantry and dash.

We were now closing in on the vital Bastia bridge—from the East from Menate from the South with the 78th Division. On the night 13/14th April, the 56th Division carried out a second right hook over the flooded country with the 24th Guards Brigade—this time with the object of outflanking the Argenta gap and securing a bridgehead over the Marina Canal in the area Chiesa Del Bando. The enemy, however, now knew that we had amphibious vehicles and he was better prepared. He had rushed down the first regiment of the 29th P.G. Division from North of the Po. Some of the outflanking troops suffered considerable casualties on landing from their Buffaloes, but a firm footing was established South of the Marina Canal. Two or three days stubborn fighting was necessary, however, in this area before the brigade established a bridgehead over the Marina Canal. Bastia was finally captured on 16th April, and during the day the enemy withdrew to Argenta.

The 78th Division and the Queen's Brigade of the 56th Division made steady progress fighting their way through the Argenta defile, keeping East of Route 16. The decisive date was 18th April, when the village of Argenta was by-passed to the East by a brigade of the 78th Division which reached Boccaleone, and the 169th Brigade of the 56th Division made excellent progress on its right. That afternoon the Commander of the 78th Division launched an exploitation force of the London Irish in Kangaroos and 9th Lancers, under the Commander of the 2nd Armoured Brigade. The 38th Irish Brigade had trained with Kangaroos with the armoured regiments of the 2nd Armoured Brigade, and this training was to pay an excellent



dividend in the next few days. By pushing on by night as well as by day on three separate occasions, an advance of several miles was made, some bridges were captured intact and many guns and prisoners taken.

The 6th Armoured Division, which had been in Army reserve, was on 18th April placed under command of the 5th Corps. The Commander had been studying two alternative roles, to lead the 5th Corps towards Ferrara and the Po if the Argenta gap was forced, or to exploit on the Budrio axis. The Division now began to move forward from Bagnacavallo. The day was a disastrous one for the German armies in North Italy and their position already appeared hopeless. The 2nd New Zealand Division had reached the Idice and the Fifth Army was approaching Route 9 West of Bologna. However, the 6th Armoured Division still had very difficult country ahead of it, with many canals and rivers, the chief being the Po Morto Di Prinaro, an old course of the Po, and the Scolo Bolognese.

#### THE FIFTH ARMY ATTACK

The main Fifth Army attack flared up from West to East, at 9.30 a.m., 14th April astride Route 64 and on the evening of 15th April astride Route 65. Both attacks were preceded by terrific air bombing of the valleys through which these two main routes ran. In these valleys the enemy, of necessity, had the bulk of his guns, local reserves and transport.

In his old mountain positions astride Route 65, the enemy put up two or three days of bitter resistance. By the 18th his position was hopeless, with the Eighth Army already on the Idice. East of Route 64, the 6th South African Armoured Division, and West of Route 64, the 10th U.S. Mountain Division, from the first made excellent progress. The advance of the 10th Mountain Division became decisive and, after fighting its way into the plains North-West of Bologna, this splendid division led the advance of the Fifth Army due northwards to the River Po. This division, composed of selected volunteers, was I think the only mountain division in the United States Army. It had had to wait a long time for its first big battle, but now nothing could stop it.

#### THE ADVANCE OF 2ND NEW ZEALAND DIVISION AND 2ND POLISH CORPS FROM THE MASSA LOMBARDA BRIDGEHEAD

Nothing could stop General Freyberg and his New Zealand Division. Supported by some eight field regiments and two medium regiments, with continuous support from fighter-bombers during daylight, the division pressed on both by night and day. Its technique was to attack under a barrage, to bridge the water obstacles with quick low-level bridges during darkness and to have tanks and anti-tank guns with the infantry before first light. From the Senio to the Idice the division advanced almost in a straight line, and its frontage of attack was clearly marked by the intensive artillery fire and bombing. Almost every house was only a shell or a mass of rubble.

The 5th Corps should now clearly concentrate on forcing the Argenta gap, so General Harding on 14th April, with Headquarters 13th Corps followed by the strong 10th Indian Division, which had twelve infantry battalions, was brought round to take over command of the 2nd New Zealand Division and the advance on the Budrio axis.

Fortunately, owing to the successful Eighth Army advance in the plains, the old 13th Corps front could now be held more lightly and was taken over by Italian troops, and some British units were left to hold Monte Grande, to which General Clark still attached great importance as the American attack was only just starting.



On 14th April the 2nd New Zealand Division reached the River Sillaro. On the night 15/16th April the division attacked across the river and by the evening of the 16th were four miles beyond. The next hard fight was on quite a small stream, the Gaiana, where the enemy apparently decided he must stand as long as he hoped to hold the hills in the Monte Grande area. General Freyberg attacked on the night of the 18th and made a rapid advance to Budrio. That night orders were issued for an attack across the Idice. It was found that on 20th April, the enemy had pulled out and was not holding his strong defences on the river. On the 20th, the 10th Mountain Division and the 1st U.S. Army Division reached Route 9 North-West of Bologna, and that night the Germans pulled out of Bologna itself. The city was entered at dawn on the 21st almost simultaneously by Polish, Italian and American troops. With the capture of Bologna, the 2nd Polish Corps had completed its task, and the 10th Corps which had been following up the enemy in the hills South of Route 9, also came into reserve.

From its bridgehead over the River Santerno at Mordano, the 2nd Polish Corps carried out a magnificent advance on the left of the 2nd New Zealand Division, parallel to and North of Route 9. Up to the Gaiana it had had the 43rd Gurkha Brigade under command. This brigade had captured Medicina and had killed a very large number of Germans in heavy fighting between there and the Gaiana.

It is interesting that throughout the battle the 2nd Polish Corps was fighting some of the best German troops in Italy, first the 26th Armoured Division and then the 4th Parachute Division and finally the 1st Parachute Division as these divisions side-slipped northwards in their withdrawal out of the big salient in the hills and in their constant endeavours to block holes which were occurring farther North.

On the Gaiana the Poles had particularly heavy fighting against their old opponents, the 1st Parachute Division. They fought magnificently, and on their front between the Senio and the Gaiana over a thousand German dead were counted. General Bohusz-Szyszko commanded the Corps throughout the battle, but he had had General Anders by his side most of the time. It says much for the former that such an arrangement worked smoothly. General Anders, when I visited him just after the capture of Bologna, said it had been indeed "Une belle bataille"; he was very proud of his men, as he had every right to be. Besides his own armoured brigade, tanks of the 7th Armoured Brigade had fought with the Poles during the battle.

#### DESTRUCTION OF THE GERMAN ARMIES SOUTH OF THE PO

On the afternoon of 19th April the 6th Armoured Division passed through West of the 78th Division, but was held up that evening short of San Nicolo Ferrarese and Traghetto. There is no doubt that about 19th April the Germans decided to withdraw over the Po; it was vital to the enemy to hold up the 5th Corps to keep open their escape routes. Everything depended upon how quickly the 6th Armoured Division could now get going. During the 20th the leading troops reached the Cembaline Canal, having turned the Po Morto at Traghetto. On the 21st the decisive successes began. The 17/21st Lancers that afternoon forced their way, covered by a smoke screen, through a narrow gap at Segni between the Cembaline Canal and the Reno. Poggio Renatico was reached by dark—an advance of eight miles. A considerable number of guns and prisoners was captured. The rapid advance of the 6th Armoured Division was kept up. The Lothians reached Bondeno on 22nd April, and early on the 23rd the Derby Yeomanry of the 6th Armoured Division reached the Po North-West of Ferrara and the 5th Royal West Kents of the 8th Indian Division, which had now come up on the right of the 6th Armoured Division, also reached the Po within



ten minutes of each other. The 16/5th Lancers this day reached Finale and linked up with the right division of the Fifth Army advancing from the South. The advance of the 6th Armoured Division had cut off a large number of the enemy, no less than seven thousand prisoners being turned back from the Finale area into the cages of the 88th U.S. Division.

Meanwhile the leading troops of the 10th U.S. Mountain Division had reached the Po near Ostiglia during the night 22nd April, so they had beaten us to the Po by a few hours! The German 1st Parachute Corps tried to get back across the river North and West of Ferrara, whilst the 76th Panzer Corps was crowding to the Po North-East of Ferrara.

Our air forces were now pounding the enemy's ferry sites along the river by night and day, and also his transport which was getting congested South of the river. East of Ferrara the enemy rear guards fought hard for two days on the Po Di Volano and between this river and the Po. By dawn on the 25th, however, we reached the river along the whole front from Polesella to the East. The crowning disaster for the enemy came on the night of the 23rd when his last three pontoon bridges were destroyed by the Desert Air Force. At every approach to the river, hundreds of M.T. vehicles were destroyed or burned out by air attack or artillery shelling. The enemy lost nearly all his S.P. guns and tanks and field artillery South of the river; he had left his withdrawal far too late. In the early morning of 25th April, the Commander of the 76th Panzer Corps, General von Schwerin, motored in to surrender to the 27th Lancers with the personnel of his small tactical headquarters. He had decided it was not good enough to swim the river. By the evening of 25th April the Germans had lost some 50,000 prisoners of war to the Allies; nearly 14,000 of these were taken by the 5th Corps. One must remember that these were nearly all front line troops; it was really only the "tail" that was left North of the river.

The first Allied troops to cross the Po were troops of the United States 10th Mountain Division who crossed about midday 24th April. For twenty-four hours there was hard fighting in a small bridgehead. Then the enemy broke and, by the evening of 25th April, the 10th Mountain Division was approaching the outskirts of Verona, thereby cutting off the whole of the enemy's troops West of Lake Garda.

#### THE CROSSING OF THE PO AND THE FINAL PHASE OF THE CAMPAIGN

On the Eighth Army front, although the 8th Indian Division had some trouble from shelling North of Ferrara at its crossing, on the rest of the front—56th Division on the right and 1st Guards Brigade of the 6th Armoured Division and 2nd New Zealand farther West—the crossing was practically unopposed. For the crossing of the Po, D.D. tanks were used for the first time. The 7th Hussars took part in all three crossings. The Adige was reached within 48 hours and was crossed by light mobile forces almost at once, using DUKWS, Buffaloes and D.D. tanks.

Meanwhile floating bridges were already across the River Po. The River Po on the Eighth Army front was between three hundred and four hundred yards wide, and the Adige about 120 yards wide. North of the Po many bridges were captured intact, but frequently a bridge went up as our leading troops arrived, and there were tremendous problems for the Engineers to keep the pursuit going. The high-level Class 40 Bailey bridge across the River Po was completed on 4th May at Pontelaoscuro North of Ferrara. Started on 26th April by South African engineers, it was over 1,000 feet long. The bridge was built on the site of a main road bridge, the damaged piers being rebuilt in reinforced concrete, from a floating landing stage.



The gaps varied between 222 and 270 feet, all beyond the normal Bailey, but they were spanned by a special triple double Bailey which had been tested at Cesenatico. The bridge site had been selected from air photographs; this made the tests possible well ahead.

North of the Adige the pursuit became a race between the troops of the 5th and 13th Corps for Venice. There was much competition to be the first troops to enter Venice, and with difficulty I managed to keep the New Zealand Division heading straight ahead to continue its gallop to Trieste. General Freyberg took the surrender of several thousand German troops in Trieste on 2nd May. These forces were still fighting in the city with Yugoslav troops when the New Zealanders arrived. The same day the unconditional surrender of all the Axis forces in Italy was announced.

#### CHIEF LESSONS OF THE FINAL BATTLE

The outstanding feature of the final offensive was the magnificent fighting spirit, endurance and gallantry shown by our Empire soldiers in this final phase of the war. The battle had gone according to plan and the German Tenth Army was literally destroyed South of the River Po. The enemy had insufficient fighting troops with which to man his short "Venetian" line North of the Po. The tremendous number of prisoners captured North of the Po were nearly all "tail".

Even before the attack of the Fifth U.S. Army had started, von Veitinghoff on 14th April in a gloomy message to Hitler's headquarters described the situation as critical; he complained that our ceaseless air attacks and artillery fire made any movement by day impossible. Communications were always cut, commanders never knew the situation, and his divisions were wasting away, in spite of the most determined and gallant resistance, at an alarming rate.

For the Eighth Army the battle had meant twelve days heavy fighting between the 9th and 20th April. A very large amount of ammunition was fired during this period, and in the last few days before reaching the Po supplies of medium artillery ammunition had been giving me very great anxiety. The offensive had been planned, however, on the basis that the enemy could not stand more than three weeks intensive operations. The Desert Air Force gave the Eighth Army magnificent support. Not only on the banks of the Senio, but often during the next twelve days the fighter-bombers of Desert Air Force were accurately bombing strong points, such as farms, only two to three hundred yards ahead of our leading infantry. They also frequently located and knocked out single tanks or S.P. guns. In the difficult terrain of Italy this brought out once again that success was always achieved by good team work; good team work between the fighter-bomber, the tank, the Crocodile, the artillery, the infantryman and the sapper. It was essential to have mutual confidence between the various arms, and this was always achieved when the various arms knew each other well and had trained together beforehand.

The veterans of the Eighth Army were proud that they had played a decisive part in forcing the first German unconditional surrender. In his generous message to Field-Marshal Lord Alexander, when the Allied Armies reached the Po, the Prime Minister said: "I rejoice in the magnificently planned and executed operations of the Fifteenth Group of Armies which are resulting in the complete destruction or capture of all enemy forces South of the Alps. That you and General Mark Clark should have been able to accomplish these tremendous and decisive results against a superior number of enemy divisions is indeed another proof of your genius for war and the intimate brotherhood in arms between the British Commonwealth and Imperial forces and those of the United States."



## DISCUSSION

AIR COMMODORE T. G. PIKE : There are one or two points in this campaign of special interest on the Air side.

In the first place, before the offensive started, the Mediterranean Tactical Air Force spent the whole Winter, some four or five months, pounding the German communications from Germany into Italy and the Balkans. A great deal of work was spent on this, and at times the result seemed questionable. It is true to say that at no period of that time except perhaps for the odd day or two did the enemy have through stretches of railway line longer than thirty to forty miles open to him before coming to a broken bridge. The object of this attack on communications was three-fold. First, the strategy was to prevent the Germans from withdrawing any of their seasoned troops in Italy to the Western Front. The second object was to block the German retreat in Yugoslavia. The third object was to prevent the building up of supplies behind the German Army in Italy before the offensive by the Allies. I should like to have the Lecturer's opinion on the effect of these attacks. A very great deal of work was put in on these attacks, and I believe that they were very effective.

There are one or two other points from the Air side which may be interesting.

The composition of the Air Forces was unusual. The Mediterranean Tactical Air Force was a combined British and American force. The headquarters was commanded by an American General with a British Chief of Staff, and so on down through the staff it was a combined affair.

The Desert Air Force had under its direct operational control American fighter squadrons, and the American Tactical Air Command had under its direct operational control British Spitfires and fighter-bomber squadrons etc. That was unique, and it worked very well. The result was a great display of esprit-de-corps between the Services, the American Army Air Service and the Desert Air Force, and the team work was good.

I should also like to touch on a point the Lecturer made about the bombing of Polish troops. We had had no experience of heavy bombers bombing close to the troops. We read with some consternation of the mistakes with disastrous results that had been made elsewhere so we thought we would play safe. Every possible precaution was taken, there were no less than five different safety precautions laid on. Observance of any one of these precautions would ensure that all bombs fell in enemy territory. Nevertheless an error was made by a leading bomb aimer with the results we heard in the lecture. This only goes to show that if a commander decides he must call for support from the air by heavy bombers unaccustomed to close support, he must be aware of and agree to accept the risk ; there always is this risk however careful the planning.

THE LECTURER : As regards the interruption and hammering away at the enemy's lines of withdrawal from the Balkans and from Italy, there is no doubt that did have a decisive effect on our last offensive ; that, combined with Hitler's strategy of always leaving things much too late before he would accept a major withdrawal.

Certainly the enemy's supply position was extremely precarious, and it was entirely due to the fact that he had a big river in the tactical battle area at his back that enabled us to win such a decisive victory, because it was the air action along the Po which produced those results.

I think the enemy, by being very economical with his ammunition over a long period, had built up fair stocks in Northern Italy ; of petrol, on the other hand, he was very short. There is no doubt that his petrol position, thanks to air action, was paralytic.

The Germans undoubtedly hung on to Northern Italy not only because they did not like any withdrawal, but because they wanted the industrial and food resources in that very rich part of Italy.

CAPTAIN E. ALTHAM, R.N. : We were, I am sure, all impressed by the account of the Buffalo and the important part it played. Am I right in thinking that it was an



essentially American type of amphibian? If so, were there any British designed amphibians comparable with it, or, if it is not an indiscreet question, can the Lecturer say whether we are now progressing towards a more satisfactory type of amphibian in this country.

I should also be interested if we may be told something about their armament.

**THE LECTURER :** The Buffalo was an American vehicle. I believe it was first designed for civil use in swamps such as those of Florida, and was developed for war use during the course of the War.

Our best amphibious vehicle was the D.D. tank. We lead in floating tanks, and although the Americans produced the DUKW, the amphibious wheeled transport vehicle, and the Buffalo, we with our D.D. Tanks did a very fine job in that form of amphibious vehicle.

From the air I saw D.D. tanks of the 7th Hussars crossing the Po and the Adige at the same time. We used this specialized equipment very much later than other troops in the 21st Army Group. We were pleased, however, with our small share of this equipment, which played quite a big part in this last battle. We also had for the first time an armoured Engineer brigade, the 25th, formed from the 25th Tank Brigade. We had not used Flail tanks until this last battle. In every case this equipment arrived in Italy rather late, and it was a tremendous rush against time to produce it for 9th April. To show you an example of co-operation, we had armoured car crews, R.A.S.C., and American tank men manning our Buffaloes in this battle. The actual Buffalo drivers who took the Queen's Brigade to Menate were men of the 755th U.S. Tank Battalion.

The armament of the Buffalo was nothing. You carried your own arms in it, machine guns, etc. We mounted 25-pounders in the Buffalo. We found the gun fired from a Buffalo extremely well either afloat or ashore. It was a steady gun platform, and we frequently used them in the right hook actions South of the Lake.

**CAPTAIN E. ALTHAM, R.N. :** Should we be right in regarding the production of amphibious vehicles for crossing rivers and swampy ground as being quite a different problem from that of producing a type for landing on a beach?

There seems to have been a great deal of experimenting during the War, and, it would be reassuring to learn that the problem has been solved for each of the two separate uses—but perhaps this does not come within the scope of this lecture.

**THE LECTURER :** That is, I suggest, a little bit outside the subject of this lecture. The only thing that is obviously used in both types of operation is the D.D. tank. As regards landing from the sea, I do not think I can go into that.

#### THE CHAIRMAN

I know you all want me to thank General McCreery for his thrilling lecture to-day, and his graphic description of the last campaign of the Eighth Army. The Eighth Army had hard fighting throughout its long advance across Africa and Sicily and right up Italy. We lost at various times many divisions to other theatres, and it is a tremendous satisfaction to those of us who served with the Eighth Army to hear how it finished its great venture before the other armies in Western Europe.

There are three points arising from the lecture which I should like to raise, very briefly.

The first is the value of the Italian campaign to the future historian and student of military history. I think we have got to settle down in the future and assess what we can learn from this last war. The Italian campaign has been very little publicized, and there is a danger, for that reason, that some of its more important lessons may not be brought out clearly for posterity.

I think that one of the main lessons arises from the fact that the whole campaign had to be fought on a very narrow and constricted front. The first point that any historian



would raise, is: "Why fight up Italy at all?" This is beyond our present discussion, which is not concerned with political issues. Then he would say, if you had to fight up Italy, why did you not use airborne troops and amphibious operations. The answer to that is easy—we had not got them; for they were, quite rightly, sent to other theatres where they were more vitally necessary at that time.

A student of this campaign will find valuable lessons in the conduct of the offensive battles, and the technique of the follow-up battle. Both these operations can be costly and slow, when one is confined to a narrow frontage, and when neither airborne or amphibious forces are available.

My second point concerns the Poles, about whose splendid fighting General McCreery has told us. They also fought magnificently in the battle for Cassino, at Ancona, and the Gothic Line; and now we have heard what they did in this last battle. They are now in this country, and so far they have not had a good Press. As a result there are many people in England who barely know on which side the Poles have been fighting. I believe that all of us in this room can assist by propaganda to ensure that the Poles get a better Press and more sympathy for what they have done for us during the War.

My third point is one which both General McCreery and Captain Altham have raised. Throughout this war, and particularly in the early years, we have had to fight both in our major battles and in most minor engagements for a defile. This defile may be the gap between the Quatara depression and the sea at Alamein, the minefields of Merza Brega, the beaches of Normandy, Italy or the Arakan, the narrow Liri Valley on the route to Rome, the Argenta Gap, or the tracks in the jungles of Burma. In almost every case we have lost time and casualties; and I believe that one of the main reasons for these continual delays has been the design of the load and troop carrying vehicle with which we have been equipped.

General McCreery talked to-day about the specialized Army track vehicles. I refer now to the ordinary load and troop carrying vehicle. The Americans produced a 2-ton truck with six wheeled drive, which had a magnificent cross-country capacity. We suffered for many years from having a high proportion of two-wheeled drive vehicles in our Army.

I fully realize that it is difficult for us in peace time, with our excellent road system in the United Kingdom, to go into commercial production with a vehicle which is suited for the wide open spaces, with good cross country capacity. But I do put in a plea that in the future our leaders in the Services and in the Government should collaborate with the motor industry to find some means of increasing the overall cross country capacity of the ordinary commercial British motor vehicle.

I know that it is a difficult problem, but I suggest that we might achieve our object if our Government and our industry were actuated by the notice that appeared on the road between Kalewa and Imphal on the road to Mandalay, outside the headquarters of one of our field companies:—

Impossibilities can be done at once;

Miracles take a little longer.

I should once again like to thank General McCreery for what has been for us all a thrilling talk on the last campaign of the Eighth Army. It was indeed a magnificent finish to an epic venture. (Applause.)

The vote of thanks to the Chairman was proposed by Admiral Sir Charles Little (Chairman of the Council) and was carried by acclamation.



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THE FINAL OFFEN











## IMPERIAL STRATEGY AND THE MIDDLE EAST

By WING COMMANDER S. G. WALKER, O.B.E., R.A.F.

**T**WO major factors have emerged from the 1939-45 war: on the one hand, the United States of America, now unquestionably the most powerful single nation, is, in spite of isolationist opposition, showing a willingness to play her part in sharing the task of ensuring world peace; on the other hand, the destruction of three totalitarian States with their strongly nationalist ideologies has been achieved by a combination of Allies which included Russia—a State more totalitarian and more ideological in its principles than the three defeated States put together. Between these two powerful forces, each with its own and differing way of life, we find the British Commonwealth holding the balance—the hope of the smaller countries of Europe and an example to the world in the fight for personal liberty and the sovereignty of nations. To maintain such a position, strength is required, and in any plan for a strong combination of British peoples, the area known as the Middle East plays a most important role. This area may be defined as including Egypt and the Anglo-Egyptian Sudan, Palestine and Transjordan, Cyprus, Lebanon and Syria, Turkey, Iraq and Persia, the Arabian Peninsula, Eritrea and Somalia.

Politically, these Middle Eastern countries have entered into an increasingly active participation in the life of the westernized world and, avidly absorbing the spread of western nationalism, have striven to throw off European control. Furthermore, the area contains the home of three of the world's greatest religions—Judaism, Christianity and Islam—and is now more than ever affected by the desire of world Zionism for a Jewish national home in Palestine, which desire is violently opposed by practically the entire Moslem world.

Economically, the area contains the Suez Canal and the largest known and potential petroleum producing centres within the British sphere of influence, while the adoption of western ideas throws open more and more markets for goods from the West.

Strategically, its importance lies in the fact that it contains the land bridge between three Continents, the shortest reinforcement route to our Colonies and Dominions around the Indian Ocean, where four-fifths of the population of the Empire are to be found, the nodal point of cable communications and Imperial air routes and the only routes by land from the Indian Ocean area, into south-eastern Europe and western Asiatic Russia.

### HISTORICAL REVIEW

Better to appreciate the present day position of the Middle East in relation to British Imperial strategy and future policy in the area, let us briefly examine the historical events which led up to the period when British influence predominated in that region.

#### XIXTH CENTURY

Seeking an outlet for her trade and administrative energy, Britain built up a position in India and the Indian Ocean area which called for certain measures of protection, but it was not until Napoleon's bid to conquer Egypt and Syria at the end of the XVIIIth Century that the danger of an overland advance on India was appreciated.

French influence was strong in the eastern Mediterranean area. In the Middle Ages there had been Frankish kingdoms in the Holy Land, and centuries later



Doughty had discovered Frankish consuls in the seaports of the comparatively unknown Arabian Peninsula. In Egypt, normally a vassal state of the Ottoman Empire, Britain and France struggled for supremacy in the economic and political field. The country was rescued from financial disaster in 1876 when the Khedive Ismail, having impoverished his land, repudiated his debts and caused Britain and France to appoint joint controllers of Egyptian finance.

The second half of the XIXth Century developed into a struggle between France and Great Britain for control in the eastern Mediterranean and, through that, in the Middle East as a whole. We opposed the Suez Canal plan, but in 1875 bought up the major part of the shares in a brilliant political coup. In 1882, when Arabi Pasha led a revolt against the European domination of the "Dual Control," France refused to act, leaving Great Britain to occupy the country and assume complete control. By the end of the century the reconquest of the Sudan gave Britain a hold over the West coast of the Red Sea and greatly enhanced her position in Egypt.

France, however, was not the only Power which demanded our attention in the Middle East in the XIXth Century. Russia also provided a threat, but she was baulked in any ambitions by the combination of Great Britain, France, Italy and Turkey against her in the Crimea in 1856-57; and in 1878 at the Berlin Congress, Great Britain acquired the island of Cyprus from which to protect the Asiatic possessions of the Sublime Porte from Russia. Russia, however, wanted warm water harbours and, failing to secure any in the Mediterranean, moved South towards the Persian Gulf. This meant a threat to India, and Great Britain promptly established a protectorate over all the coastal Sheikhs. Nothing daunted, Russia turned her attention to Afghanistan, control over which would provide an even more serious threat to India; but we fought two wars to ensure British predominance in Kabul, and Russia ultimately turned her face to the Far East and the Pacific.

Gradually, throughout the XIXth Century, Great Britain assumed political relations with the various States in the Middle East, mainly to protect the vital sea communications of the Empire, but also to prevent any extension of other European influence. An effective policing of the Persian Gulf commanded the land route to India and, indirectly, the western approaches to the Indian Ocean, and by the end of the XIXth Century, British naval supremacy in the Mediterranean remained. France was more interested in the western Mediterranean basin, across which passed the manpower from her North African Empire. Before the Century ended, the extension of German influence to the Ottoman Empire in plans for a Berlin-Baghdad railway brought yet another major Power actively into the area.

#### XXTH CENTURY

The main features in the Middle Eastern panorama at the beginning of the present Century were the struggle by British administrators to put Egypt on her feet; the persistence of French influence in the Levant; the menace of German influence in the Ottoman Empire; the defeat of Italy in Abyssinia and her growing need of an outlet for her increasing population; the still unsettled Russian encroachment in Persia; and, above all else, the crumbling rottenness at the heart of the Ottoman Empire.

In quick succession Great Britain secured control of the Persian Gulf; Russia and Great Britain divided Persia into spheres of influence; and Germany extended her sphere to Basra in the agreement to terminate the Berlin-Baghdad railway at that point. In areas under direct Turkish domination, the Sherif Hussein of Mecca



was gaining followers and prestige ; while in the little known areas of Central Arabia, Ibn Saud and his Wahabis were demanding recognition.

Then came the First World War which set loose three contradictory political forces :—

- (a) the traditional Imperialist ambitions of the European Allies in regard to the partition of Asiatic Turkey.
- (b) the Arabs' hostility to Turkey and their desire for independence, and
- (c) the desire of World Zionism for a Jewish national home in Palestine.

The British campaigns in the Middle East, designed on the one hand to prevent a German drive to India and control of the Indian Ocean, and on the other to support the Arab revolt against Turkish domination, tied up no less than a million Allied troops in the area—a force which could no doubt have turned the scales on the vital Western Front.

The Allied victory found the three major political forces mentioned above holding the centre of the stage in Middle Eastern affairs. France was back stronger than ever in the eastern Mediterranean and was awarded the mandate for Syria ; Italy was confirmed in her pre-war seizure of Libya and was awarded the Dodecanese ; while Great Britain found herself charged with the mandatory responsibility for Palestine, Transjordan and Iraq, the complete control of Egypt and the privilege of exercising an exclusive influence in the Hedjaz and Saudi Arabia.

The period between the wars is remarkable in the Middle East area for three things : the upsurge of nationalism in the Arab countries and the progress of the Pan-Arab movement ; the increase in the power and prestige of Abdul Aziz Ibn Saud, King of Saudi Arabia ; and the growing bitterness and enmity between Jews and Arabs on the one hand and between each, separately, and Great Britain on the other.

#### THE PAN-ARAB MOVEMENT

The Pan-Arab movement is a vast subject on its own, but a brief resume of its progress will be attempted below, while the rise of Ibn Saud is so linked with Pan-Arabism that we must refer to this at the same time.

In the Middle East the small Arab States, though intensely nationalist in outlook, were untrained in self-defence, except for desert skirmishes, and in the technique of modern government. They were, therefore, less capable than the old Ottoman Empire of safeguarding Europe's sea communications with the East, and each one of them found itself virtually controlled by foreign advisers, British or French.

The Arab countries had gained more than any others from the victory of the Allies ; freedom was at hand at little or no cost in Arab gold and not much cost in Arab blood. Arab States, with promise of ultimate independence, had been set up in Egypt, Syria and Lebanon, Transjordan, the Hedjaz and Iraq. The Nejd and the Yemen were granted immediate independence ; and Palestine, whose future as an Arab or a Jewish state was obscure, was also taken under mandatory control.

The Middle East is the core of the Islamic world, and though religion is becoming less binding among its peoples than antipathy to the West, it still remains a force to be reckoned with in an Empire which counts well over 100,000,000 Moslems among its population. There were, however, two main forces which were making for co-operation among countries of the Middle East. Externally, pressure of European great Powers was bringing them together in defence of common interests.



Internally the Arab movement, which excluded Turkey, Persia and Afghanistan, was making them more alive to their nationalistic aspirations and their strength in combination. The Arabs realized that Great Britain and France were no longer aggressive and that they had been progressively reducing their claims in the Middle East area; but they were violently opposed to the handling of the problems in Palestine by the one and of those in Syria and Lebanon by the other. In fact, the British policy in Palestine was then, as it still is, tenaciously opposed by a united Arab people and most of the Moslem world.

Arab nationalism was expressed in the Arab Covenant of 1931 which made it clear to all interested that the Arab peoples must aim at the single goal of independence and unification by federation or other means and that all colonization of Arab lands would be repudiated.

There are, however, many difficulties in the way of the attainment by the Arabs of the "single goal of independence and unification." Independence they will eventually achieve, but unification seems still a far-off goal. The greater and more organized the Arab States become, the more interested are they in particularism and the less in Pan-Arab agitation. They talk about fraternity, but in action local and particular interests are the decisive factors. In fact, an eminent Frenchman, writing before the late war, summed up the Pan-Arab movement as follows: "(It) is one of sedition and agitation, which tends by every means to sap the authority and the interests of the Western Powers in the East; it is of an ideological and sentimental nature, but one knows that in the East among the masses of illiterate Arabs the force of certain ideas can have considerable destructive powers" (Georges Meyer—"Le Conflit des Imperialismes au Levant" in *Affaires Etrangères*, November, 1937).

Ibn Saud, in his pacts and alliances, has shown true statesmanship, and Great Britain has not stopped the progress of Saudian hegemony throughout Arabia. Would it be unnatural if Ibn Saud should want Pan-Arab federation under his Presidency, and ultimately the restoration of the Caliphate, for which he would be No. 1 candidate?

All the time, however, the personal and political rivalries between all Arab leaders are damaging their cause. For instance, has Ibn Saud ever forgiven Abdulla's father, Hussein, for declaring himself "King of the Arab Countries" at the time of the Arab Revolt in 1916 (later watered down to "King of the Hedjaz" to gain British and French recognition) or for declaring himself Caliph of all Islam when the Turks abolished the Caliphate in 1924? And he has certainly not yet given up his claim to Aqaba, the Transjordanian port on the Red Sea. Then there is the political detachment of Egypt, which by reason of her wealth and longer and fuller contact with Western civilization has taken the lead in the revolt of the East against the West. There is no knowing but that Farouk might fancy himself as the Caliph of all Islam, with Egypt supreme among the Arab countries. Finally, the religious differences between the Wahabis of Saudi Arabia and the rest of the Arab peoples tend more towards separation than towards unification.

The formation of the Arab League comprising Egypt, Syria and Lebanon, Transjordan, Iraq, the Yemen and Saudi Arabia, was the only major development in the Pan-Arab movement during the late war. It is worthy of note that Arab agitation and terrorism in Palestine, so rife for the three years before this war began, were abandoned whilst Britain had her hands full elsewhere; and strangely enough, now that the war is over and our attention can again be turned to Palestine,



it is the Jews and not the Arabs who are having recourse to violence, though anti-British propaganda is active in the Arab lands and we stand in as great danger as ever of losing Arab respect and faith by our handling of the situation in Palestine.

For the second time the Arab countries have come off best after a major war. Those European countries whose modern independence was born of the 1914-18 war—Czechoslovakia, Poland, Yugoslavia—have all suffered untold damage, misery and loss, but the Arab countries are better off than ever. Those that are not fully independent rapidly approach that happy state, and even Iraq, after an error of judgment and a pro-German revolt in 1941, retains her independence under Treaty agreement. Only Palestine remains under mandatory control—a running sore in an otherwise healthy Anglo-Arab understanding.

#### THE STRATEGIC IMPORTANCE OF THE MIDDLE EAST TO THE BRITISH EMPIRE

We have agreed that the British Empire and Commonwealth will hold the balance between the differing ideologies of the New and the Old Worlds, and that their erstwhile mission in the World remains. To maintain ourselves as a world force for good we need wealth, industrial power and strength of arms, particularly on the sea and in the air.

We have sketched the political aspect of the Middle East in relation to this scheme of things. Let us now turn to the strategical considerations which give the Middle East the position it holds in the future of the Empire. We know, after two world wars in twenty-five years, that victory comes to those nations which combine manpower with industrial power to achieve defeat of the enemy. Great Britain to-day can be classified as highly industrialized and capable of organization for war production. The Dominions are rapidly increasing their industrial capacity and war production potential. But Great Britain and the Dominions do not possess all the essential raw materials together in one place, and sea communications are vital to their productive capacity. Nor do they possess individually sufficient manpower to meet any major emergency; and any one, without the help of the others, would rapidly fall victim to an aggressor's advance.

In war and in Imperial defence the transfer of raw materials, finished products and manpower are basic requirements of the British Empire and Commonwealth. In peace, in world trade, the same transfers excluding manpower are equally basic to their well-being. And one requirement is vital and common to both peace and war—communications which can be secured against enemy attack or interference and can be maintained at all times. To achieve this degree of security for vital lines of communication there must be adequate naval bases, areas where the Imperial strategic military reserve can be housed and trained without let or hindrance, airfields where all the requirements of modern aircraft can be met, and good harbours where supplies of men and materials can be off-loaded or embarked.

Such a requirement in an Empire scattered all over the world calls for careful attention to the strategic value of areas through which these lines of communication must pass; and of all such areas none is more complex, none more vulnerable to internal insecurity and none more vital to us than the Middle East. To the still paramount importance of the Suez Canal can be added the security of the entire Eastern Mediterranean—Red Sea—Arabian Sea—Persian Gulf area, so that we may arrive at some understanding of the reasons why in the last war the Axis made three major attempts to overrun the Allies in this area and why the Allies tied up a million



and a half men in its defence. Let us, then, glance at the factors which give the Middle Eastern area this importance in Imperial strategy.

#### EGYPT AND THE SUDAN

The independent Kingdom of Egypt controls the land and sea routes between three continents. British cable routes to India, South Africa, the Far East and Australasia pass through Egypt. Air communications also centralize in Egypt, where the Imperial route divides in two—one to India and the Far East, via Iraq, the other to South Africa and the Cape.

Since 1882, when Great Britain first occupied the country, it has provided a good training ground with excellent climate, good fertility, good rail communications, first-class harbours and a much coveted base for the strategic reserve forces for the defence of the Empire. It readily covers the Mediterranean area, the Arab countries and our possessions in East Africa, and it is a fine staging post en route to India and the Far East.

Egypt is open to attack from the Mediterranean, from the Red Sea and the Gulf of Suez, from the Sinai Desert, the Libyan Desert and the limitless wastes of Nubia. But in almost every case attacks would not be successful unless they were made with naval and/or air supremacy: and to-day, no first-class Power with whom we are not already allied is established anywhere within range of Egypt.

The present demand of the Egyptian people that we evacuate their country completely, whilst compatible with our oft expressed clichés signifying the freedom of peoples, is nevertheless regarded as a calamity by many die-hard Imperialists. Much depends on the outcome of the present negotiations which have as their aim the revision of the 1936 Anglo-Egyptian Treaty. Britain is rightly concerned with the defence of the Suez Canal and the protection of her financial and other interests in Egypt. She is also concerned with the future alliances which may be sought by Egypt, with the security of the Sudan and with the internal security and well-being of Egypt herself. For their part the Egyptians claim that they are well able to govern themselves and that their own defence forces are competent to defend the Canal and to maintain internal security until assistance arrives.

On 13th May, 1946, in *The Times*, Ismail Sidky Pasha, then Prime Minister of Egypt, stated *inter alia*: "The political and military interests of Great Britain will be better safeguarded through friendship and collaboration than they will be by means of out-dated formulæ of Imperial politics which have been definitely rejected by the conscience of the peoples of the World." This is a statement not easy to refute, but it is unfortunate that we must go back to 1874, when 50,000 Egyptians fought for the Turks at Plevna, for any evidence of the Egyptians' good fighting qualities. Certainly some fought in the Turkish ranks against the Allies in the 1914-18 War, but those who deserted and joined us as part of the Arab bid for independence did not unduly impress. Nor was their share in the defence of their own territory in the last war particularly meritorious, despite their political good faith in remaining loyal to their treaty of alliance with Great Britain.

The Anglo-Egyptian Convention of 1899 established the Sudan as a Condominium—an Anglo-Egyptian protectorate. Now, as our authority in Egypt fades, our control in the Sudan becomes more important. The Sudan still covers the land and sea approaches from the North-West to our African possessions and it still controls long stretches of the Red Sea.



## PALESTINE, TRANSJORDAN, SYRIA AND THE LEBANON

The mandated territory of Palestine and the independent Kingdom of Transjordan provide, with Syria, the principal land bridge between Eurasia and Africa. They protect the Suez Canal and Egypt and the Red Sea countries from land-borne invasions from the North; and together they cover the land route, which starts in Palestine, to India and beyond. Haifa, the best harbour on the eastern littoral and the present terminal of the oil pipe line from Iraq, could be converted into a good naval base. Transjordan acts as a buffer state between an unsettled Palestine and Saudi Arabia, while in Aqaba it has the only town on the East coast of the Red Sea where a harbour could be constructed.

As a centre of air communications Palestine is more important still. It provides adequate facilities at Lydda for land planes and on Lake Tiberias for flying boats on the Empire routes to India and the East.

The independent Republic of Syria and the autonomous area of Lebanon have never been within the British sphere of influence; but as integral parts of the Middle East complex and as territories in which our Ally France has been, and still is, vitally interested, they cannot be left out of this review. Before the last war, France was taking from 70 to 80 per cent. of the oil from the Iraq oilfields, and this constituted about 50 per cent. of her total needs. The oil pipe line from Iraq in which the French are interested passes through Syria to the port of Tripoli which, like Haifa, has potentialities as a naval base.

## CYPRUS

The Crown Colony of Cyprus, first acquired at the Berlin Congress in 1878, was eventually annexed and incorporated into the British Empire in 1914. Being in such close proximity to the shipping which converges on Port Said and the oil line termini at Tripoli and Haifa, it cannot be left out of any strategic problem relating to the Middle East, and though it holds a position of lesser importance than Gibraltar, Malta, Alexandria and Haifa, it would be of considerable value to any other Power.

There is a modern harbour at Famagusta which, at an estimated cost (before the last war) of from one to three million pounds sterling, could be converted into a first-class harbour for all ships of the Royal Navy. The salt lake at Limassol provides adequate operational facilities for flying boats, and airfields have been built on the island. In fact, Cyprus could also serve as an alternative to Egypt or Palestine as the air centre of the Middle East.

## TURKEY, IRAQ AND PERSIA

Since the collapse of the Ottoman Empire, Turkey has retained her independence and, in a remarkable national recovery, has also held her place as a buffer State between the European Powers interested in the Middle East. The control of the Straits, which link the Aegean and so the Mediterranean with the Black Sea, was by the Montreux Convention of 1936 handed back to Turkey, who was given the right to re-militarize the zone. The entry of any Power into the Mediterranean from the Black Sea area would cause concern to Great Britain and her Ally, France, and a treaty of alliance with Turkey is a justifiable precaution.

The independent Kingdom of Iraq remains one of the central pieces in any scheme for strategic control of the Middle East. It lies at the middle of the Eurasian axis on the shortest land and air routes to India from Great Britain and, by its control of the head of the Persian Gulf, helps in our command of the Indian Ocean. At Basra we find the only port of ingress West of Karachi which opens land routes



north-westwards up the Euphrates to Constantinople and to Europe and to western Asiatic Russia. In Baghdad we find an important junction on the air routes between Europe and the Far East and a potential centre for the future penetration of Asia by air.

To this geographical importance in world communications we must add the importance of the oilfields which have been developed in Iraq, and the commanding position of Southern Iraq in relation to the richer oilfields of Southern Persia. Before the last war Britain never relied on the Iraq oilfields for more than 4 per cent. of her total requirements, having signed away most of the balance to France in return for Mosul, which fell under French control in the Sykes-Picot Pact of 1916. Nevertheless, we must not lose sight of the value to the Royal Navy of a ready supply of oil at Haifa. And at Abadan there is one of the World's largest and finest oil refineries which played a most important part in the recent Allied victory.

The independent Kingdom of Persia, like Turkey, is Moslem in religion but non-Arab in race. By treaties and agreements of mutual assistance, such as the Saadabad Pact of 1938 with Turkey, Iraq and Afghanistan, she enters the Middle Eastern scene only on the outskirts. But her contiguity with the Persian Gulf and her southern oilfields, recognized as being within the British sphere of influence, bring her more sharply into any consideration of Imperial strategy in the Middle Eastern area.

Persia to-day is struggling to free herself from the political and economic embarrassments of two of the world's four Great Powers—Great Britain and Russia. From the Russo-Persian dispute of last year it is very obvious that Russia, having gained a hold in the northern zone by oil concessions and political penetration, is not willing to surrender that hold. Persia, at least, has already tested the strength of UNO, but the results seem more of a Pyrrhic victory than an assurance for the future. And whatever the future, the oil from the southern oilfields is of vital importance to the British defensive position in the Middle Eastern area. This was proved over and over again in the last war, when practically the whole of our requirements for shipping in the Middle East and Indian Ocean areas were met—with some assistance from the Iraq oilfields—by the Anglo-Persian oil production.

#### THE ARABIAN PENINSULA AND THE PERSIAN GULF

The Arabian Peninsula consists of the independent Kingdom of Saudi Arabia and its dependencies, like Asir and Al Hasa, the independent Imamate of the Yemen, the British Crown Colony of Aden and the Aden Protectorate, and the Principalities of the Persian Gulf which consist of two Sultanates and eight Sheikdoms, all under British protection.

The whole area is of considerable strategic importance, and it is not difficult to appreciate why British influence predominates at the four corners of the peninsula—at Aqaba, Aden, Oman and Kuwait; while the whole of the southern coast and three-quarters of the eastern are under British protection. At Kuwait we find the best natural harbour in the Gulf, while the Bahrein Islands provide Britain with a naval headquarters for the zone. Airports on our route to the East are found at Kuwait, Bahrein, Dibai on the coast of Oman, and at Gwadar in Baluchistan, which is ruled from Muscat.

At no time can Great Britain afford to overlook the religious and political interests in Saudi Arabia, which contains the birthplace and centre of the Mahomedan religion and is ruled by the greatest Arab king. Our relationship with Ibn



Saud, based on mutual respect, has long been friendly and progressively more secure. This is particularly satisfactory, for Saudi Arabia is believed to contain considerable untapped oil resources which may play a vital part in world supply.

So far as the Yemen is concerned satisfactory treaties have been concluded with the Imam Yahya ; and Aden, the only fortified port between Malta and Bombay, now controls a hinterland which is troubled only with minor tribal disputes.

By our treaties with Saudi Arabia and the Yemen we have prevented the entry of any other Power to these territories, an event which would menace our main sea route to the East through the Red Sea to an extent unacceptable in considerations of Imperial defence. And on our position in the Arabian Peninsula and the Persian Gulf depends much of our command of the Indian Ocean.

#### ERITREA AND SOMALIA

Eritrea and Somalia, a collection of British, French and ex-Italian colonies, though insignificant in world affairs, are nevertheless of importance in the scheme of Imperial defence as applied to the Middle East area. They flank the main sea route to the East as it passes through the Red Sea and into the Indian Ocean, and though the presence in this area of the Italian Navy and Air Force did not prove of any great consequence in the last war, there is no question but that their possession by any more determined and more belligerent Power would render the route unusable in time of war.

#### BRITISH NEEDS

The continued progress in peace and the security in war of the British Empire and Commonwealth depend, without question, on sea communications. The advent of air transport, while speeding up the transfer of small numbers of men and small loads of material, and while giving great promise for the future, has not yet affected the essential need of good sea communications to the British Empire.

#### NAVAL BASES

The onus of defending our sea communications through the Middle East rests mainly on the Royal Navy, though an increasing share is falling to the Royal Air Force. These communications are the governing factor in the difference of the strategy of a navy from that of an army, for at sea they are common property until mastered by one side or the other. The aim of a navy is therefore the mastery of communications, and to achieve this aim it must have adequate bases from which to operate, for naval bases are the principal factor in the mobility of a fleet, extending its range of offensive action and permitting it to move all along the line of communications.

Gibraltar and Malta have developed over a hundred years, while Singapore took nearly ten years of concentrated labour and cost something like eight million pounds sterling. We are now faced with a decision on Haifa and Famagusta, either of which would prove suitable for construction of a naval base. The first is in mandated territory, the future of which is uncertain ; the second is situated in a Crown Colony. By agreement with Egypt we shall no doubt still have the use of Alexandria in time of war, while Aden remains, fortified and providing harbour and re-fuelling facilities, though lacking in dockyard accommodation for refit and repair.

#### AIR BASES

Progress in aeronautics and the developments of long range bomb-carrying aircraft have rendered most of the vital areas in the Middle East vulnerable to air



attack. Aircraft of the Superfortress type could to-day reach Egypt and the Suez Canal from Eastern Europe, from any points as far West as the Atlantic seaboard and from points in Persia and beyond. The Persian and Iraqi oilfields are also vulnerable to air attack from the Black Sea and Caspian Sea area; while the whole line of sea communications through the Middle Eastern area is exposed to attack from Mediterranean Powers or hostile Powers established in Egypt or the Red Sea countries.

The object of an air force is to provide "an effective deterrent to any attack upon the vital interests of a country," in this case, a deterrent to any one attacking our Empire communications. But as shock-strategy, which means war without prior declaration, is most likely to be applied against the British Empire, our air forces must be based in, or very near to, our vulnerable areas.

Here again bases are a vital necessity, for without them an air force becomes immobile and then its pervasiveness, its flexibility, its ability to concentrate or to exercise economy of force or to exploit surprise, are all of no avail. For mobility gives an air force its greatest strategic asset, which is flexibility, and mobility depends on bases and communications.

To-day, we are losing our air bases in Egypt, have some ten more years of agreed tenure of bases in Iraq, still have mandatory rights in Palestine and as yet show no intention of surrendering our position in the Sudan. In addition, we have indisputable rights in Cyprus and Aden, while the future in Libya and Eritrea—both at present under British military administration—may find us established as the senior partner in any regional system of security covering these areas.

#### PALESTINE

Though some trusteeship system may be applied to Palestine, it is here that our best alternative to Egypt as a central base in the Middle East will be found. If Palestine were held by a friendly people, backed by the Arab states in friendly relations with Great Britain, our strategic requirements in the country would be small. We would require, under treaty agreements:—

- (a) a *place d'armes* for the strategic military reserve for Imperial defence,
- (b) an air centre, and
- (c) certain rights over Haifa.

If we cannot reach such an agreement the results will be destructive—for us by the loss of the safety of our communications with the East and a probable increase in enmity among the Moslems of the Empire; for the Arabs by their losing our protective organizational and financial assistance in international affairs. And who will deny that the Arab States of the Middle East are either singly, or collectively, quite incapable of defending themselves against outside aggression by a major Power?

#### THE INTERNATIONAL ASPECT

##### THE UNITED NATIONS ORGANIZATION

The United Nations Organization has promised regional systems of security throughout the World. Self-determination of small nations and the sovereign rights of all are guaranteed, while aggression will be collectively opposed by all means, including resort to arms—the arms, presumably, of some World Police Force. To this, it is proposed, all nations shall contribute men and materials within their security regions. Whatever its shortcomings and however much it suffers



from the memory of its unsuccessful predecessor the League of Nations, there is no doubt as to its need in a troubled world.

Despite the promise of UNO, however, some of the Great Powers, no doubt with one eye on Britain's conduct of affairs in the Middle East, are determined to make doubly sure of their own future security and are laying claims to other strategic areas of importance, not always with each other's blessing or unqualified acquiescence. A brief study of the major trends in these matters will be of interest.

#### RUSSIA<sup>1</sup>

In Europe particularly, Russian foreign policy is causing alarm and despondency. Russia is determined to gain the fruits of her victory and to repair as much as possible of the enormous loss she suffered at the hands of the enemy. Poland, for whose integrity we went to war, is in the Soviet grip. Czecho-Slovakia is almost a Communist State. Rumania, Hungary and Bulgaria are feeling the Soviet pressure. Yugoslavia is governed by a Communist dictatorship. Greece, Italy and France have all felt the red hand of Communist propaganda and have suffered unrest and strife in varying degrees; while Finland and the Baltic States are completely under Soviet domination.

In Asia similar pressure is being exerted, as Persia has found to her cost. Encouragement of political strife and the support of Communist factions in this area can again be traced to Russia. In the Far East, Russia is back in Port Arthur, has assumed control of the Kuriles and is carrying out her European practice of stripping Chinese territory of industrial machinery and infiltrating Communist elements. And her reply to all suggestions that her actions might be improper and contrary to the spirit of the United Nations Charter is that she must secure her frontiers and ensure that States sympathetic to the Soviet Union act as buffers between Russia and the outside world. How long will the Great Powers stand this negation of all the principles enunciated in the United Nations Charter?

#### THE UNITED STATES OF AMERICA

America's main strategic interests lie in the Pacific and, after the rude awakening at Pearl Harbour, she is bound to take no chances but to secure her possessions in that ocean area. In addition to her possessions she has large trade interests and much capital in the Orient. True, her main interest lay in the Philippine Islands, now blossoming forth into independence, but there is no doubt that this interest, like Britain's in Egypt and Iraq and France's in Syria and Lebanon, will not evaporate because of a change in local political control.

It is no secret that America wishes to acquire sovereignty over two islands in the Pacific owned by Great Britain—Christmas and Funafuti, and one—Canton, which is jointly controlled. In addition, there are Saipan and Tinian Islands, over which full sovereignty will be claimed. Certain other islands, considered as highly strategic in the United States' plans for Pacific defence, might pass to the Security Council of UNO upon terms which would, in fact, embody effective American sovereignty; and there are yet others, less vital, which might be placed under trusteeship.

The financial cost to America in defeating Japan in the Pacific was enormous, while her casualties were also considerable. Though helped by British Empire

<sup>1</sup> See also "The Political Strategy of Russia" in this Journal.—EDITOR.



forces, she always regarded military action in the Pacific as being within her particular sphere. There is no doubt that what she has won by hard-fought campaigns at great cost, she is loath to relinquish even to her Allies. Fortunately she is achieving her ends by direct request and logical reasoning, and is having no recourse to political infiltration or military pressure.

#### FRANCE

France, once a great force in Europe and the Mediterranean, has suffered a grievous blow by her defeat at the hands of Germany and by the internal strife which has been raging ever since. Only now is she showing signs of returning to some political stability, and she is fortunate in having her Empire intact, except for the surrender of the mandate over Syria and the Lebanon.

She has always been interested in the Mediterranean, and during the whole of the XIXth Century was seeking to establish herself in a position of power in the Middle East. She did manage to exert her influence in Egypt to obtain a concession to cut the Canal, still regarded as of the highest importance in the scheme of Imperial defence. Though Britain owns 44 per cent. of the shares, the headquarters of the company is still in Paris and France provides twenty-one of the directors compared with ten from Britain, one from the Netherlands and two from Egypt. Her influence in Egypt is noticeable, and French is the common second language of most educated Egyptians and Levantine Arabs.

In Syria, mandate or no mandate, her interest remains, mainly because some half of her total supplies of petroleum comes from Iraq and is delivered by pipe line across Syria to the port of Tripoli. Farther to the South she holds French Somaliland, which includes the port of Jibuti, and a controlling interest in the only railway into Abyssinia.

#### CONCLUSION

Our examination of Britain's strategic position in the Middle East leads us to the conclusion that the area has lost nothing in importance, in its relation to Imperial defence. What we once had by right—either of conquest or of mandatory responsibility—we must now seek by treaty of alliance. For the Middle East to-day is no longer an area for rival imperialisms as in the past two Centuries, but an area where the spread of Western nationalism has brought into prominence the sovereignty of the Arab States, now striving together to create a force—Arab unity—with which to take an ever increasing part in world affairs.

The hope of the World lies in the United Nations Organization and in its regional systems of security; and under one of these regional systems we may easily find British influence still predominant in the Middle East.



## THE RADIO WAR

By AIR VICE-MARSHAL E. B. ADDISON, C.B., C.B.E.

On Wednesday, 13th November, 1946, at 3 p.m.

AIR MARSHAL SIR JAMES M. ROBB, K.B.E., C.B., D.S.O., D.F.C., A.F.C.,  
in the Chair

**THE CHAIRMAN :** We are going to be told this afternoon about certain aspects of the War which, as will become obvious, had to be shrouded in the deepest secrecy. It is not merely the tale of a battle of wits, it is the story of how organized science, ably directed and courageously executed, enabled us first of all to defeat the German night bomber menace, and then to make possible our own night bomber offensive.

For the defensive phase, an organization called No. 80 Wing was rapidly built up, and its work in saving the country from great additional destruction is not generally known. When the time came to go over to the offensive, a special Group was formed, No. 100, and it was formed at a time when our night bombers were having great difficulty in reaching their targets. In fact, the enemy night defences were beginning to get the upper hand. This Group cured that, and made possible the night offensive.

The officer who built up No. 80 Wing and directed its operations, and who then formed and commanded No. 100 Group, was Air Vice-Marshal Addison. From the very nature of the work of these formations, he too has had to remain in the background. It is with very special pleasure, therefore, this afternoon, that I ask Air Vice-Marshal Addison to tell us the story of the Radio War.

### LECTURE

**B**EFORE developing my theme, I feel I should explain that my subject, "The Radio War," covers so wide a field that I am impelled, in order to keep within my allotted time limits, to narrow it down considerably. It is capable of treatment from two different aspects. The first of these is the point of view of the technician, and deals with the technical evolution of Radio during the past war in which it played so important a role. Such a lecture would largely consist of a description of the many and various Radio systems employed during the War, and the uses to which they were put. The second mode of treatment is to regard Radio as a weapon, and to consider its influence upon the tactics of modern warfare. I shall deal mainly with the second interpretation of the subject, since not only can it be reduced to more general terms, but it is likely to be of greater interest to an audience who may not wish to be confronted with numerous technical details of apparatus whose general characteristics are now familiar to most.

All three Services, not only of our own armed forces but also those of our Allies and enemies, made extensive use of Radio<sup>1</sup> during the War, but my lecture will be concerned almost exclusively with its application to air tactics, particularly of night bombing, and the methods we adopted to restrict the advantages that our opponents could gain from its employment.

### EMPLOYMENT OF RADIO IN MODERN WARFARE

In brief, we can say that Radio in the late war had three main applications. The first of these is the extension of normal listening range for the purpose of communication at a distance. The second is the extension of the human visual faculties as regards both range and penetration. The third is its employment as an aid to air

<sup>1</sup> The term "Radio" is used here in its widest sense to embrace all wireless systems whose basic principle is the transmission of energy through the ether. Radar, or Radiolocation as it used to be called in this country, falls within this general category.



navigation and blind bombing. In varying degrees, as we shall see, all of these uses came under fire in the waging of the Radio War.

Before 1939, we were accustomed to think of 'Radio,' or 'Wireless' as it was then more usually called, merely as a means of transferring information from one place to another by the agency of electric energy passed through space. The great advantage of this method of signalling lay in its ability to cover immense distances and to surmount physical obstacles without a man-made connection between transmitter and receiver. In time of war, such a form of communication obviously has vast applications of tremendous value. However, the scientists and engineers were not long in finding uses other than signalling for this new science of Radio. They discovered, for example, that by its means they could 'see' aircraft up to distances of some hundreds of miles, or watch the ground beneath them when flying in the dark or above cloud. They found, too, that they could provide the fighter pilot with an 'electric eye' with which he could see his opponent on the darkest of nights. This property of being able to 'see' by means of Radio is one which, as I will endeavour to show, has become a very important tactical factor, particularly in air warfare.

The use of Radio as an 'electric eye' is a product of that branch of science which we now term 'Radar.' The basic principle of Radar, as you probably know, is the emission of pulses of electric energy and reception of the reflected pulses after a calculable time delay. From a knowledge of this time delay, and by the employment of a means of direction-finding in both horizontal and vertical planes, it is possible to fix the position in space of the reflecting object.

By this method we were able to detect the presence of approaching aircraft and eventually, as the art developed, to estimate the speed and direction of approach, as well as the number and sometimes the type of aircraft. Thus, with the erection of a chain of stations around this country, it became possible for us to gain early warning of the approach of enemy raiders. Later, a further development enabled us to detect in much the same way the presence of surface craft.

Once the basic principles of Radar were established, rapid progress was made in the extension of its uses. I will quote a few examples. The night-fighter pilot and his prey could be watched simultaneously from the ground, so that by means of R/T, the fighter could be directed to within close proximity of his target. Having arrived within a certain range, the fighter pilot could then, by the aid of a Radar indicator carried in his aircraft, make his final approach to within visual distance of his opponent.

Then again, our Coastal Command aircrews were provided with an 'electric eye' with which they could detect surface craft and submarines with sufficient accuracy to enable them to approach to within visual range, or even to attack without ever seeing their target with the naked eye.

Our night bomber crews, too, were provided with a number of Radar devices which enabled them not only to navigate with accuracy to their target area, but, on arriving in the vicinity of their target, to pick out their actual objectives and bomb them regardless of the conditions of visibility. Other systems provided them with a means of fixing accurately their position in space at any desired moment; whilst still others gave them warning of the approach of enemy fighters.

#### THE EVOLUTION OF RADIO WARFARE

It was inevitable that the employment in war of Radio in all its ramifications was not likely to remain the monopoly of one side only, particularly in a conflict



between great Powers whose scientific attainments were of a comparable standard. It was just as inevitable that the one side would attempt to deny to the other the tremendous advantages that Radio was now capable of bestowing upon its user. Thus arose the necessity for the introduction of organized Radio counter-measures whose initiation launched the Radio War or, if you prefer it, the War in the Ether.

Realization of the seriousness of the problem was first made by ourselves in 1940, when it was discovered that the enemy intended to use against us methods of Radio-aided navigation and blind-bombing which would enable him to raid us by night at a time when our air defences were not sufficiently developed to ward off such attacks. After the collapse of France in 1940, the enemy erected an elaborate ground system of Radio aids close enough to Great Britain for them to be used by his night bombers when attacking vital targets in this country. By the help of these, German aircrews with but small knowledge of, and experience in, navigating by night, could find and bomb large air objectives such as big cities and widely-dispersed industrial centres, and then find their way home again without getting lost. The enemy's ability to use such aids thus constituted a very grave menace to us, not only from the material, but also from the moral point of view. So it was, in the face of dire necessity, that we first conceived the idea of R.C.M.—Radio Counter-Measures—an organization which grew into an immense system involving the absorption of great resources of manpower and equipment and the devotion of much scientific and engineering endeavour.

The Radio War was on, and it promoted much controversy. The idea of jamming wireless communications was by no means novel, but it was a generally accepted principle that there was more to be gained by not inviting interference with our own communications by deliberately jamming those of the enemy. The Royal Navy particularly, and, to a lesser degree, the Army were most loath to start a general jamming campaign; and in the R.A.F. we, too, felt that we had much to lose were we to be deprived of the full use of our normal Radio channels of communication.

This viewpoint was maintained in principle by both sides throughout the War, and no large-scale attempt was made by either to jam the opposing main Radio communication systems. From the inception of Radio counter-measures, this fear was always uppermost, and every new proposal was closely examined by an Inter-Service Board, one of whose more important duties was to prohibit the use of any counter-measure that they considered likely to precipitate a general jamming war. Methods had, therefore, to be devised which, whilst interfering with the enemy's means of air navigation or control of his aircraft would, at the same time, be sufficiently subtle to obviate his considering them as an excuse for embarking upon wholesale jamming as a reprisal. Time will not allow me to explain all the various means that we adopted to restrict the advantages that the enemy was liable to gain by the use of his Radio, so I will limit myself to describing a few of the more interesting methods that were employed.

#### THE DEFENSIVE PHASE

One of the most successful of these was the system that we introduced in 1940 for preventing the enemy from making full use of his medium frequency Radio beacons of which he had installed a large number along the coasts of Holland, Belgium and Northern France. For this purpose we set up in this country a number of stations at which the beacon signals were received. The received signal was fed into a transmitter which was thereby caused to radiate a signal identical to that of the German beacon. In short, the enemy signal was used to trigger off our transmitter,



thus ensuring perfect synchronization. The result was that the German air operator, instead of hearing only his own beacon signal, heard a combination of his own plus one or more of ours. Since all the signals heard were in exact synchrony, his direction-finder was unable to give him an accurate response.

The Germans were not long in discovering this trick but, even after it was known to them, none but an exceptionally skilled air operator could ever tell whether or not the beacon he was listening to was being interfered with by us. The Germans gave instructions that, in cases of doubt, the crew of an aircraft were to transmit from the air, and they would then be D/F'd from the ground and be told their position by Radio. We countered this by causing the German aircraft signal to trigger off ground stations in this country, so that the German ground D/F operator in enemy territory actually read the mean of two or more simultaneous signals emanating from different localities. As a result, German aircraft were often given fixes over this country which were entirely false. Consequently many of his pilots became completely lost, some landing on our aerodromes and others crashing from lack of fuel whilst endeavouring to return to their bases.

An even more dangerous practice that the enemy resorted to at this time was the use of long-range navigational beams. He installed a number of beam transmitters along the Continental coasts opposite our shores and, by means of rotating aerial systems, was able to direct the beams on to any target in this country within a range of 200-250 miles. His *modus operandi* was extremely simple. Beams from two stations separated by a distance of the order of 100 miles, were laid to intersect over the objective. The German pilot would fly up one beam and drop his bombs at the moment of passing over the point of intersection of the other. It was estimated that, by this method, bombs could be dropped with an accuracy of about 500 yards at 200 miles range without the pilot ever having to see his target or having to worry about navigation once he was on the director beam.

The frequencies on which these beams worked were those of his normal blind-landing systems. This meant that, since all his night bomber aircraft were fitted with blind-landing receivers as part of their standard equipment, and since all his crews were trained in their use, Goering was able to adapt his bomber squadrons to beam-flying very rapidly and so prepare them to attack large area targets by night under any conditions of visibility with but very little extra training.

The task of countering this system with rapidity was a difficult one. We had no suitable transmitters of sufficient power to enable us to obliterate completely the beam signals over the whole of the country. We had, therefore, to resort to subtlety. It was a question of rapid improvisation, ingenuity, hard work and, above all, freedom to act without having to wait for authorization from above. Fortunately all these desiderata were forthcoming. A band of enthusiasts comprising a mixture of serving officers, scientists, Radio engineers, and even a well-known London radiotherapy specialist, were organized into a Signals Wing, and given every encouragement and facility from the Prime Minister himself downwards. They were permitted to draw freely upon sources of very valuable aid from the various Service technical establishments, from the G.P.O. and B.B.C., and from certain selected commercial firms. Eventually they were able to impair, to a large degree, the efficacy of the German beams.

Before describing the method we employed, I should explain that a Radio beam used for air navigational purposes is not a beam in the usually-accepted meaning of the term. The beam transmitter emits two main lobes which extend over areas



of hundreds of square miles. One lobe consists of dash signals and the other of dots. These dots and dashes are so timed that, if heard simultaneously and at equal intensity, they combine to form an equi-signal. The two lobes are so spaced that their flat inner edges just overlap, and so provide a central lane which produces an equi-signal to an observer flying along its length. It is this central lane that is called the beam. When to one side of the lane, the observer either hears dots or dashes and then, by applying a simple rule of thumb, knows in which direction to turn to reach the central lane or beam.

Our method of countering this system was to emit dashes which sounded exactly like those of the enemy's beam transmissions. These were not synchronized with the German signals, but were superimposed upon them. When in the dash zone, the enemy pilot would turn in the required direction, but on arrival over the central lane would still hear predominating dashes and so would tend to overshoot. When in the dot zone, he would hear a mixture of dots and dashes, which would not resolve themselves in the expected manner when he applied his rule of thumb.

A curious feature of this operation, the reasons for which were not at first obvious to us, was that the enemy believed we were deviating his beam. This idea became prevalent among German bomber crews, and soon it became obvious, by following the tracks of their formations across this country, that frequently such a phenomenon was, in fact, being produced. We thereupon made use of this effect to our advantage by installing decoy fires around the more vital targets in this country. These fires could be rapidly ignited as soon as it became apparent to which side or other of the intended target the enemy formations were being misled. On some occasions these decoys were very successful indeed in off-setting the central point of the enemy's attacks to open country a short distance from their objective.

Another discovery we made at this time was that the Germans believed their beam signals were of sufficiently high frequency for us not to hear them on the ground in this country. This supposition did, in fact, accord with the theoretical laws of propagation which were known to both us and the Germans before the War. As it happened, however, experience proved that we *could* hear them, and not only were we able, as a result, to decide which of the numerous interfering transmitters deployed all over this country were required to be brought into use for the particular direction in which the beams were trained for the night, but we knew exactly when to bring them into operation, and the frequency on which they were to be brought up. Another very important feature was that, by means of our ground observations, we were often able to plot the general direction in which the beams were laid, and so gain an inkling beforehand as to the probable target for the night. The enemy continued to use this system long after it had fallen into mistrust mainly, perhaps, because he hoped that it would keep our attention away from a new and improved beam device that he was then about to use in his attacks on this country.

The underlying principle of the new beam was similar to that of the old, but it was of greater accuracy, and on a higher frequency. Being on a higher frequency should have made it even more improbable, according to theory, to detect it on the ground but, here again, theory failed and we found we were able to plot it as before. It was, however, a very much more complicated system, and capable of being set up on a much greater number of frequencies than the earlier type. These new beams could not be used by all the German bomber force. The system required a quantity of special apparatus to be carried in the aircraft, and a very high degree of training on the part of the aircrew. Its use was, in fact, confined to a single highly-trained



specialist unit who acted as Pathfinders to the rest of the force. Their duty was to mark the target and, if possible, start fires in the target area to serve as a luminous guide to the main body—much as our own Pathfinder Force did towards the end of the War.

Our method of countering these new beams was very similar to that employed against the old, but had to be on a very much more extensive scale. Not only was the range greater, but the system involved the simultaneous use of at least five beams, all on different frequencies. Actually seven beams were normally used at a time against a single target. Before we were fully ready with our counter-measures, the Germans made very successful use of this system, but gradually, like its predecessor, it fell into mistrust as our countering methods became more effective.

The Germans then introduced another system in the form of an entirely different type of blind-bombing device which, in some respects, was a crude version of that subsequently used by our Pathfinder Force for accurate pin-point bombing. This consisted of a single beam, working on a new principle, which was directed over the target and along which the bomber flew. During this process the aircraft was caused to emit signals at intervals which enabled the controller on the ground to estimate accurately its exact position along the beam. When the bomber arrived over the target, the ground controller gave the aircrew the order to bomb.

But this device also suffered interference at our hands although, on its first appearance, we had some difficulty in determining the principles on which it worked. The enemy, however, helped us, as far as the time factor was concerned, by committing the grave error of using it over this country for experimental purposes before employing it on a fully operational scale. It would appear that this undue haste was, to some extent, prompted by the failure of his previous devices on which he had placed so great a hope. In any event, he had, by now, reached the stage of realizing that we were sufficiently well organized to counter rapidly any new system which he might produce, and so was inclined to relax his security precautions. The mishaps incurred by the various systems he had so far employed also created a feeling of despondency amongst the German Air Staff, who were no longer so well disposed to give their full support to devices which in some instances had become a cause of delusion rather than of assistance to their bomber crews. Moreover, by now, our air defences had got into their stride and were beginning to take heavy toll of the invaders.

Thus we saw the decline of the German night offensive against our home country and, with it, the closing of the first chapter of the Radio War. The instances which I have quoted of the methods employed by the Germans to assist their navigation over this country, and the various measures we adopted to counter them, by no means represent the full story. There were many more, all of which ultimately demanded a very large effort on our part. There can be but little doubt that the air defences of this country were aided, in no small degree, by the work of this counter-organization at a time when our means of warding off heavy night attacks were meagre in the extreme. Moreover, the valuable experience we gained during this defensive phase was to stand us in very good stead when our turn came to deliver bomber attacks in great strength on the Germans.

#### THE OFFENSIVE PHASE

The second phase of the Radio War, that is to say the Offensive Phase, came into being when it was realized that the defensive system of the enemy was becoming so efficient as to inflict serious losses on our night bomber forces. We were now on



the offensive and the Germans were sinking all their resources into the building up of the air defences of their territory. Their defensive organization depended for its success to a very large extent indeed on the use of Radio, and with the rapid strides made in this art by the German scientists, Bomber Command was meeting increasing opposition as its attacks grew in intensity. Slowly the toll taken of our night bombers rose as the German defences became more efficiently developed, until it was realized—and at this stage our scientists uttered a grave warning—that defence was likely to outstrip offence where night bombing was concerned. At this time, too, it was becoming very evident that the use of Radio by the enemy was a factor which had to be taken seriously into account in our planning of night raids. The Germans were able to gain very early warning of an impending attack and could follow continuously for a long period the approach of our bombers. Thus he could congregate his fighters well beforehand in the right area and so be ready to inject them, with the aid of inland Radar systems, into the bomber stream as soon as it arrived overland.

A knowledge of the methods that the Germans were using enabled Bomber Command, however, to route their aircraft in such a manner that the danger from Radar was lessened to some extent. For example, it was found that concentration in time and space caused saturation of the enemy's Radar. Again, 'zig-zag' routing made it more difficult for the enemy to guess the probable target by observing the general trend of approach.

But our opponents soon learned to modify their defensive systems to counter such stratagems, and although new tactics frequently led to a temporary reduction in our casualty rate, the enemy was quick to re-adjust his defences to meet every new contingency as it arose. So it became increasingly obvious that a more positive protection against the effects of the enemy's Radio systems was required. A number of devices for interfering with the enemy's apparatus, particularly those concerned with the control of his night-fighters, were invented and installed in our main force bombers, but the extra weight to be carried, and the added onus imposed on the air-crews who had to operate the complicated apparatus in addition to their normal duties, tended to outweigh any advantage that they bestowed. Eventually it was concluded that specialist R.C.M. aircraft and escorting night-fighters, fitted with special devices for searching out and destroying the opposing night-fighters, were needed. Thus it was decided, late in 1943, to form a separate Group within Bomber Command, whose main function would be the protection of our bombers at night. This took time to organize, since the apparatus had to be made and fitted into the aircraft and the specialist crews had to be trained.

In the meantime, however, Bomber Command obtained a very welcome respite by the introduction into operational use of one of the simplest and yet most successful counter-measures of the War. For many months previously, we had known that strips of metallized paper when cut to the right dimensions would cause spurious echoes on the German Radar apparatus. If, therefore, sufficient quantities of these strips could be thrown out by our bomber aircraft whilst within range of the apparatus, the German fighter control and anti-aircraft Radar systems would become cluttered up. The sudden introduction on a large scale of this device completely took the Germans by surprise, and for a considerable period had the effect of greatly reducing our casualty rate. Although the Germans never completely recovered from the effects of 'Window' as it was called, they were able, once the initial surprise was past, to re-adjust their fighter control methods to overcome to an increasing degree the effect of this counter-measure. Once again, our losses began to mount.



However, by now, the new R.C.M. Group was rapidly taking shape and as its strength, and skill born of experience, grew, its existence began to make itself felt. So our bomber losses once more decreased and for the rest of the War were never again so high as they were prior to the introduction of 'Window' despite the fact that the nightly effort of Bomber Command attained, during this period, an unprecedented level.

The new Group had three main functions : first, it provided aircraft to accompany our bombers for the express purpose of interfering with the German Radar and ground-to-air Radio-control channels ; secondly, it furnished night-fighter escorts ; and thirdly, it employed aircraft for search purposes with the intention not only of checking how effective were our counter-measures, but also of discovering what new Radio devices the enemy were using.

The aircraft employed were four-engined bombers and long-range night-fighter Mosquitoes. All were packed with a mass of apparatus, much of which had to be specially designed for the purpose. The Mosquitoes, in particular, carried 'black-boxes' in every possible available position. These enabled them not only to home on to the German beacons over which the enemy night-fighters used to assemble, but also to home on to the Radio apparatus which the German night-fighters carried for intercepting our bombers. The material effect of their operations in terms of enemy night-fighters destroyed and damaged was considerable, but possibly the moral effect of their activities was even greater. The enemy night-fighter was no longer able to concentrate solely on his task of shooting down bombers. Now he had continually to be looking over his shoulder in the fear of being followed, and he became apprehensive, too, of the attractive effect produced by the switching on of his airborne Radar apparatus, and so tended to become disinclined to use it as freely as before.

During 1944, as the value of the operations of the new Group became more apparent, it was increased in strength until eventually it comprised as many as fourteen operational squadrons. With its growth came a considerable extension of the scope and nature of its work, and now, for the first time, it became possible to devise many ingenious new forms of operation with the intention not only of destroying enemy night-fighters, but of diverting them from our main bomber force. For example, it was found possible by the use of 'Window' to cause a handful of aircraft to simulate a force of several hundreds. A main force ejecting 'Window' appeared like an extensive 'blob' on the enemy's Radar. In this blob the individual aircraft were concealed. By using a small number of aircraft, appropriately disposed in space, to cause a like degree of 'infection' over an area equal to that occupied by a main bomber force, a similar sort of blob could be made to appear on the enemy's Radar. Thus we were able to mount decoy raids simultaneously with those of the main force. The enemy had to choose whether to concentrate the bulk of his fighters on any one of the raids with which he was threatened (in which case he had to *guess* the right one), or divide them up to cover all the raids (in which event the force available to attack any one was proportionately reduced in strength).

Another effective method was to employ 'spoof' aircraft in such a way as to give the appearance of the main raid splitting before reaching its target. The enemy would see on his Radar a large force of aircraft approaching, whose head would suddenly divide into several prongs, each of which pointed at a vital objective. He now had to guess which of these prongs constituted the real menace.



Yet another method was to infect an immense area with 'Window' just before the main force was due to arrive. This was done by the 'spoof' aircraft preceding the main force by a short distance and then fanning out as they approached the target area, 'Windowing' hard as they did so. The main force on arrival would then disappear into the cloud of 'Window' and, until the bombs started to drop, the enemy could not determine the actual objective destined for attack, nor could he discover the direction in which the bombers were heading for home after leaving the target area. This resulted in his being unable to deploy his fighters in time to meet the attack, or to assemble them to catch our returning aircraft.

It will be realized, of course, that this sort of operation entailed the lifting of a tremendous weight and bulk of 'Window' material in each of the 'spoof' aircraft. This quantity would have been too great if enough material had had to be carried to enable the 'spoof' aircraft to drop 'Window' in sufficient quantities during the whole of the time that they were in range of the enemy Radar—a distance of anything up to 300 miles. It was necessary, therefore, to conceal the approach of our forces until our aircraft were comparatively near to the target area. This we achieved by putting up a screen of jamming aircraft in such a position that it blinded the enemy's early-warning apparatus on the approach side. This screen would in itself, however, have constituted a timely warning of an impending attack, since it had to be in position some hours before our main force was due to reach its objective. To overcome this disadvantage, the screen was frequently deployed at times when the rest of Bomber Command had the night off. The presence of the screen, therefore, might or might not herald the approach of our main forces; and the enemy, on the grounds both of morale and economy of fuel, eventually became loath to put his fighters into the air as soon as he heard the screen take up its position.

Another use of the 'spoof' forces was to cause attrition of the enemy. On some nights when Bomber Command were not due to attack, 'spoof' bomber forces would go out. The enemy, on first hearing the screen take up its position, would then alert all his defensive organization, his fighters being held in readiness on the ground. Suddenly, out of the screen would burst one blob or more of bombers. Were they real or decoy? If he waited too long he would not be able to deploy his fighters in time to catch the bombers. If he acted immediately he ran the risk of wasting precious petrol and depressing the morale of his fighter force. He had, therefore, to guess—and many times he guessed wrongly. On one occasion in particular, 'spoof' attacks were made two nights running on a heavily defended North Sea port. On each occasion the enemy reacted violently, and in force, but each time he found he was striking empty air. On the third night a real raid was launched, but this time he sulked and the port was subjected to a very heavy attack with but negligible losses to our bomber force.

By methods such as these we succeeded not only in partially blinding the enemy but in turning his defective vision to our advantage by laying him open to deception. In this we were eventually aided, as far as the Western Front was concerned, by his evacuation of France and the Lowlands, since not only had his early-warning system to be drawn back but we were able to supplement our airborne R.C.M. by a ground system deployed on the Continent which we pushed up close behind our front line. One of the various ground counter-measures that we employed during this period was the transmission of false instructions to the enemy fighters. Since the fighter crews required to be given quickly and plainly their final instructions after they were airborne, their messages were usually sent 'en clair' by R/T. Aircraft accompanying



our main bomber streams carried apparatus for jamming these channels of communication, but eventually the enemy countered this by increasing the power of his transmissions to such an extent that they broke through our jamming. We then resorted to the use of high-powered transmitters in this country to talk to the enemy night-fighter crews. We employed German-speaking operators to countermand the instructions given by the opposing controllers, or to give warnings to the German fighters of bad weather and other impending terrors. Although not always successful, this stratagem did, however, add to the general confusion and troubles of the already harassed enemy night-fighter, and it certainly served still further to shake the declining morale of all but his few select aces.

Incidentally this operation exemplified a principle which is of paramount importance in Radio warfare—the necessity of continuously appreciating what the other fellow is likely to do next so as to be ready to meet him as soon as he attempts to do something new. In this instance we imagined that, if our 'ghost voice' was successful in causing trouble, the Germans might well employ a woman controller should the situation become very critical. Consequently, when training our male 'ghosts,' we took the precaution of simultaneously training two women. Sure enough, one evening, during a particularly hectic exchange of opinions between the German controller and our 'ghost' as to the best method of conducting the German night-fighter operations, a woman was suddenly heard to take over control on the enemy side. She was immediately taken to task by our duty female 'ghost' who, for many nights, had been eagerly waiting for just such an opportunity to have her say.

The net result of all these operations was that the dire disasters prophesied by our scientific advisers did not come to pass. Our night bombing was able to continue, not only without crippling losses, but actually with an ever-decreasing casualty rate—and this at a time when Bomber Command's attacks were reaching their highest peak of intensity.

The experience we gained in the use of these various counter-measures was turned to very good account by Bomber Command and the Navy during the Normandy invasion in 1944. Not only were we able to blind at will the remaining German early-warning systems that had not already been smashed by low-flying aircraft prior to the landing, but also to simulate landings and attacks by air and surface craft in sensitive areas in which no invading forces were actually employed. These tactics were successful in helping to delude the enemy as to the real point of invasion and in adding to the state of confusion that existed in enemy territory.

The Germans were very much less advanced in their counter-measures than ourselves. It transpired that they did not fully appreciate the immense advantages to be gained from the use of this weapon until late in the War and, by then, all their R.C.M. resources had to be devoted to endeavours to make their defensive apparatus proof against our counter-measures, or to devise entirely new apparatus which they hoped would take us a long time to counter, and so give them a breathing space.

The enemy undoubtedly should have been able to gauge the extent of the value that we derived from the various forms of Radio apparatus used by our bombers to reach their targets, to attack them with accuracy, and then to find their way home again in bad weather. Invariably we had an undisturbed use of our Radio aids for periods much longer than we ever dared to hope, so that, by the time the enemy did ultimately succeed in interfering with them, we were ready with another and better device working on an entirely new principle. The fact that the enemy was so far



behind in this important side of modern warfare is all the more difficult to understand when we consider that he must have been aware of the treatment to which his own Radio aids were subjected during the period of his heavy night attacks against us in 1940-41, and of the success we achieved with our counter-measures in protecting our bombers during the latter part of the war in Europe. Senior German officers with whom I have spoken since the end of the War did indeed admit the extent of these successes, and expressed bitter regret at the short-sightedness of their own Air Staff and technical services in not providing them with a weapon of similar effect.

### THE FUTURE

And now, what of the future? The late conflict has pointed in no uncertain manner to the likely trend of weapon development in the next war—a struggle in which the product of the scientist's brain is likely to play an even more predominant part than we saw during 1939-1945. Perhaps among the most important of these developments will be the production and employment of remotely-controlled lethal weapons capable of travelling immense distances at great heights and at speeds hitherto unattainable; capable also of being aimed with a very high degree of accuracy and of being armed with explosives, small in size but of tremendous destructive power.

I have heard it stated that, if we ultimately reach this stage, there will be no means of defence by the attacked nation—the aggressor will have it all his own way and the war will be over before it is declared. It is possible indeed that present methods of defence would be incapable of dealing with weapons of this nature, but surely it is by no means certain that effective counter-measures could not be found for use against them. On several occasions during the late war I heard the belief expressed that some form or other of new apparatus was so intricate that it could not be successfully countered, or such and such a weapon was so predominantly powerful that no means of defence against it was conceivable. Rarely, if ever, were such conceptions eventually found to be true. The danger lies in concentrating effort on producing a weapon to the exclusion of simultaneously working on methods of countering it or nullifying its effects. Often production of the counter-measure may require more effort and more time than the perfecting of the object to be countered. If the result of a future war, consequent upon the production of new lethal weapons, is likely to be swift and decisive there will not be time to invent and produce counter-measures once hostilities have started. They must be prepared beforehand. There is a danger—a likely danger now the War is over—that scientific effort may be wholly directed to the production of bigger and better weapons, and so leave none available for what, in my opinion, should be the equally important task of inventing methods of countering them—and perhaps, who knows, in the next war we shall not have time to spare before coming to actual blows.

This is, perhaps, the most important lesson that the Radio War has to teach us, for it may well be that these new weapons will require some form or other of Radio control, not only to guide them to their objective, but possibly to explode them at the desired moment. That being so, it should not be beyond the ingenuity of the Radio scientist and engineer to devise means of diverting these projectiles, or of causing them to explode before their due time. Scientists, too, must find a way of detecting and following their course at whatever height or at whatever speed they travel, and then, possibly, of firing another projectile capable of being directed unerringly towards the intruder to meet it in mid-air. Such ideas may sound fanciful—so did the tales of Jules Verne when he wrote them. In my opinion the effects of any



product of the scientist's brain are always capable of being neutralized by a fellow scientist working in the laboratory next door. Success in any future war between fully developed nations may well turn on the fulfilment of this theory.

The process of transition from the present methods of warfare to the ultimate form which I have just visualized is likely, however, to be gradual, and will comprise the introduction of new weapons and new tactics of an intermediate character in many of which Radio will play an essential role. It may well be, therefore, that Radio counter-measures will develop into a very important method of defence. In this event the principles of Radio warfare, learned and applied for the first time in the last war, will require to be studied and exercised continuously in order that we may profit by them in the next one.

### DISCUSSION

COLONEL SIR W. H. D. ACLAND : I wonder if we might be told whether the Germans used wireless for the control of the V.1 and the V.2 ?

THE LECTURER : V.1's were not controlled by Radio. The only Radio device the V.1 carried was a small transmitter which enabled the Germans to follow its course, for the purpose of checking roughly where and how far it went. Only one in, say, twelve had a transmitter in it for this purpose.

As regards the V.2, it is believed that the ultimate model was intended to have some form of Radio control, but we caught up on the Germans before they were ready to launch it and Goering realized that if he waited much longer he would not be able to use the V.2 at all. Thus the V.2's that were used against us were not Radio controlled. That is all I can say about the subject.

GROUP CAPTAIN W. R. WORSTALL : Is there any possibility of increasing the range of Radar round the world ?

THE LECTURER : Yes, I think there is. We are only on the outskirts of Radar development, the science being still in its infancy. I think there is no doubt that future developments will enable us to increase the range. It is just as important at the present moment that we should increase our range upwards as well as horizontally, and I think the two will come together. Thirty years ago the range of ordinary wireless, as we then knew it, was relatively limited. It is now world-wide. Presumably it will be the same with Radar eventually. Experiments are proceeding with a view to increasing the present extent of Radar cover.

CAPTAIN S. H. PATON, R.N. : Can the lecturer tell us if the Germans made extensive use of ' Window ' or did it come in too late ?

THE LECTURER : That is rather a long story. After we had used ' Window ' the Germans claimed that they knew all about it. Within a fortnight of our using it, they used it. The ' Window ' that they used should have been different from ours since the frequencies that they required to clutter up were different from those with which we were interfering. As a matter of fact, the first ' Window ' the Germans employed against us was an exact copy of ours—they had even gone to the trouble of blackening one side of the strips, which we did as an experiment in our earlier patterns in order to lessen reflection from the searchlights.

Goering said he knew all about the device, but regarded it as so dangerous that he did not dare to tell anyone. We ourselves were experimenting with ' Window ' long before we were prepared to use it operationally. We decided not to use it until we were certain the enemy would not be able to use it against us with devastating effect. The Prime Minister himself delayed the operational introduction of ' Window ' until the moment was opportune and I think he chose the best moment to launch this very effective device.

LIEUTENANT-COMMANDER D. E. BROMLEY-MARTIN, R.N. : Can you tell us how long ' Window ' is expected to remain effective after discharge from aircraft ?



THE LECTURER : Whilst falling through the air it causes interference. The time of fall depends on the height from which it is thrown, the size of the pieces, the wind, and so on.

I think it takes something like ten minutes for an ordinary piece of ' Window ' to flutter down from 15000 feet to a height at which it is no longer visible to the ground Radar. In our operations we continually renewed the ' infection.' The main force threw their ' Window ' out at a rate of, say, a couple of packets, each containing several hundred strips, every minute. In the case of our ' spoof ' aircraft, the rate of ejection was very much faster since it was necessary that the product of the numbers of ejecting aircraft and the rate of ejection had to be the same for both main and ' spoof ' forces in order to cause an equal degree of ' infection.'

INSTRUCTOR LIEUTENANT R. KNOWLES, R.N. : Will you tell us how the Germans came by the secret of the magnetron ?

THE LECTURER : The principle of the magnetron was fairly generally known before the War. We, however, were the pioneers in its use in airborne Radar apparatus.

Any secret apparatus carried in an aircraft is likely to be captured if flown over enemy territory. One of the principal means of finding out an enemy's secrets is to examine his aircraft after you have shot it down. Detonators are sometimes used, but are not always sufficiently effective. We were able to get much information about the enemy's devices by examining the various apparatus that we found in his aircraft after capture. The enemy did not take long to discover we were using the magnetron once some of our apparatus fell into his hands, but it took him much longer to apply our methods.

MAJOR E. H. COX, R.A. : Apart from ' spoofing ' methods, is it possible to camouflage an object from Radar ?

THE LECTURER : I believe some advances have been made in this respect. Experiments were made during the War, but they never reached the stage of worth-while use.

The scientists are going into certain other methods to render an object less liable to be seen by Radar, but I think I am right in saying that as yet there is no effective method of preventing an aircraft being seen by our present Radar apparatus.

WING COMMANDER F. B. SUTTON : Can you say whether it is possible to, so to speak, 'see round corners ' with Radar equipment ?

THE LECTURER : We are getting into the scientific field and I am not a scientist. You will recall that I mentioned in my lecture that the enemy expected us not to hear his high frequency beams on the ground. At those frequencies it was believed that optical range was the greatest distance at which you could hear a signal, but in practice we heard them over distances very much greater than optical range. The reason was that the waves tended to follow the curvature of the Earth, so we were in fact ' peeping round the corner.' This factor is now being included in the new revised laws of propagation. I understand that if the scientists regard the radius of the Earth as being greater than its normal value, their original equations become more in keeping with observed conditions.

SQUADRON LEADER C. S. BETTS : You stressed in your lecture that it was decided in the early part of the War that it would be to our advantage not to start jamming enemy communications. In retrospect, would you say that was justified ?

THE LECTURER : I certainly do. The use to which both sides put their communication systems was so important that neither could have afforded to have done without them. I feel, too, that on our side our casualties would have been much greater if we had lost the use of our normal communication channels.

What I feel we should strive for in this business of jamming communications is to be in a position where, if we did jam the enemy's communications and he did the same to ours, it would not matter because we had ready other alternative methods which could not readily be jammed. During the War we had no such alternatives, and so dared not run the risk of having our communications jammed.



Radio counter-measures in the War were largely a requirement of the Royal Air Force, whereas communications were the property of all three Services, as well as certain essential civilian services. If for our purposes, we had started universal jamming, we would have run the risk of involving many other people in trouble.

CAPTAIN A. R. FARQUHAR: Relative to that last question and answer, can you say why, when the Germans found themselves going downhill, they did not start jamming? They had nothing to lose.

THE LECTURER: I think they had. The losing side probably depends even more on his communications than the winning side. Thus the enemy would have run a very great risk indeed had he invited us to jam the whole of his communications.

During the latter part of the War, he might well have attempted to jam our aircraft control and navigational systems, but by that time he was so committed to improving his defences that he had not the time or effort to spare to devising effective counter-measure systems on a sufficiently large scale.

#### THE CHAIRMAN

In a recent lecture here on "The German Air Force and its Failure," the lecturer mentioned two particular points: first, the use by the Germans of Radio beams in the early stage of the War and what a shock that was to us when we found it out; he also mentioned the valuable aid given by Radio counter-measures in the Normandy landings.

This afternoon you have heard the inside story of both of those episodes and, what is more, you have heard many additional reasons for the failure of the *Luftwaffe*, particularly on the technical Radio side.

Like myself, you were no doubt impressed by the Lecturer's conclusions this afternoon: the danger of concentrating effort in perfecting an offensive weapon while not simultaneously devoting similar effort to an antidote; that rarely, if ever, provided time and appropriate effort are available, has there been a failure to find a suitable counter-measure to any new weapon; also, that offensive weapons are now available, or in sight, that are so dangerous that any country attacked will not have the time after the outbreak of war to develop the necessary counter-measures to save itself from destruction; finally, that a due proportion, therefore, of our scientific effort should be continually devoted to work on finding the counter-measures to deal with these new weapons.

As one who is closely concerned with the air defences of the Country, I cannot emphasize too strongly the importance of these conclusions.

Now, on your behalf, I congratulate and thank Air Vice-Marshal Addison for his admirable and most interesting lecture. (*Applause.*)



## CARRIER AIRCRAFT IN SUPPORT OF MAJOR LANDINGS

By REAR-ADMIRAL G. N. OLIVER, C.B., D.S.O.

On Wednesday, 20th November, 1946

VICE-ADMIRAL SIR PHILIP L. VIAN, K.C.B., K.B.E., D.S.O.,  
in the Chair

THE CHAIRMAN, on introducing the Lecturer, said that Rear-Admiral Oliver had had a most varied career during the War. After escaping from "the building opposite" early in the War, he had command of the cruiser "Hermione" which had a most distinguished career until she went down under him. He then took command of the Inshore Forces in the Mediterranean, which meant that he was always moving up ahead of the Fleet and ahead of the Army in small craft to find suitable ports for the Navy and Army to occupy. He then became a Force Commander and successfully commanded such a force in the Salerno Assault. Later, with this experience behind him, he commanded one of the principal naval forces in the invasion of France. Lastly, in 1944, he went out to the East Indies and commanded the 21st Carrier Squadron, whose principal task, had the War lasted, would have been to provide air support for assaults on Burma.

### LECTURE

FOR many centuries, wars have been fought in two elements—the land and the sea; and during the centuries we in this island—a maritime Power, have learnt the absolute interdependence of the soldier and the sailor in our national strategy. Yesterday, man's conquest of the air introduced this third element in and from which war may be waged; and, since air is present alike over land and water, the airman has become equally interdependent with the soldier on land and with the sailor at sea. To-day neither the soldier nor the sailor can fight—or at any rate fight for very long—without the airman, neither can the airman operate from airfields without military forces to secure them, nor from aircraft-carriers at sea without the fleet.

During the War, an army in the field was ever accompanied by its tactical air force—a portion of the Royal Air Force specialized in the tasks of land fighting. Afloat, too, where geography and circumstances were kind, the Royal Air Force, in the shape of the Coastal and similar commands, performed a like function with and for the Navy. The later years of the Battle of the Atlantic provide the fullest example of such co-operation. But, where geography and circumstances are unfavourable, that is to say in waters outside the effective operational range of our land-based fighter aircraft, the fleet must carry its own aircraft with it and operate them from the flight decks of its carriers; and that goes for a very large proportion of the sea surface of the World.

All this sounds very obvious now. It was well appreciated and had been the subject of much thought, planning and training before 1939. The bitter experiences of Norway, Crete and Singapore—where the "Prince of Wales" and "Repulse" were lost—served, if that were needed, to drive the lesson home: the lesson of the interdependence, at all levels, of the soldier, the sailor and the airman.

I believe, however, that it is fair to say that the provision of naval air support for a military force had received far less attention, possibly none at all; and, by 1939, we had many other things to think about. So it came to pass that the use of naval aircraft in support of military operations grew up almost from the egg as the War



proceeded. It was natural too that naval aircraft should play their part in what has always been the traditional task of the Navy in combined operations, and that, besides covering the assault convoys on passage, they should give direct support to the firm establishment of the assaulting troops at their objective. As campaign succeeded campaign, lessons were continually learned from the operations themselves, from the rapidly accumulating experience of the Royal Air Force with our armies, and from the enemy. Material, and especially the complex network of communications essential to such co-operation, was developed and produced, and Naval Air Units given intensive and specialized training in the art of support. By 1944, it had become an accepted role of naval aircraft to cover and support landing operations during those stages of invasion when the Royal Air Force was geographically unable to do so. In fact, a long range assault is now usually defined as one which cannot be covered or supported by land-based aircraft.

Let us trace, briefly, that development from the egg of Naval Air support for land operations.

Carrier aircraft first gave a measure of support, mainly indirect, to our land forces during the invasion and rapidly succeeding evacuation of Norway during the lateful months of April and May, 1940. Three carriers took part: the "Furious" in the North off Narvik; the "Ark Royal" and "Glorious" farther South, off Aandsnes and Namsos. Besides fighter and anti-submarine patrols and shipping strikes, land targets were attacked, and a squadron of Royal Air Force Gladiators was conveyed and flown off to a temporary landing ground on a frozen lake. The carriers operated far to seaward and, very soon, the enemy's air strength began to make it impossible even to maintain this distant operating position. We were hopelessly outnumbered both ashore and in the air; and, with the evacuation, the operations were brought to a close.

It was not until May, 1942—two years later, that naval aircraft next acted in support. The seizure of Diego Suarez, in Madagascar, was covered and supported entirely by their aircraft from the "Illustrious" and "Indomitable." Besides their primary function of providing fighter cover, naval aircraft carried out spotting, tactical reconnaissance and ground strafing. The operations were successfully concluded within three days. Over 300 sorties were flown: there were 130 fighter patrols, 51 anti-submarine patrols, 6 searches, 37 strike sorties and 85 sorties in direct support of the troops. An ultimatum to the Military Governor was dropped and a dummy paratroop landing made to mislead the defence. Enemy aircraft were quickly driven out of the air and the majority destroyed.

In this operation, bombing and strafing were insignificant compared with the moral effect of our air superiority. Besides putting heart into our troops it had a most depressing effect on the enemy—a welcome change from 1940. The chief lessons learnt were, by the Navy, how much remained to be done to equip ourselves fully to pass on to the troops the benefits of our new found air superiority and, by the Army, how much more the Air could do to help them than they had ever expected.

In the following November, 1942, carrier aircraft operated in support of the triple landings in North Africa, which may be fairly described as the first major seaborne assault of modern times. The landings at Casablanca were supported by American naval aircraft; those at Oran, in the centre, by the "Furious," "Biter" and "Dasher"; and those at Algiers, by the "Victorious" and "Formidable." The plan called for little tactical support of the Army, since it was judged—correctly—that opposition would be slight. So the naval air task was mainly to



cover the assaults from enemy air attack. This operation saw the first appearance in any numbers of what was later to be the naval Seafire fighter aircraft. The rapid enlargement of the beach-heads, the absence of any large scale enemy air attack in the early stages of the invasion, and the timely capture of airfields enabled shore-based aircraft to fly in before dark on D-day. In fact, some were already airborne before the airfields had been captured. Some signs of the possibilities of naval aircraft in direct support were afforded, however. Albacores were called on to bomb several forts that resisted the advance of our troops. This they did, promptly and effectively. An enterprising Seafire pilot landed beside an American tank column and offered his services for reconnaissance, which were gratefully accepted. The aerodrome at Blida, not far from Algiers, was captured solo by the pilot of a naval Martlet.

The next invasion campaign that followed in the Summer of 1943 was the capture of Sicily. On this occasion, naval aircraft accompanied Force H, covering the movements of the invasion convoys against the Italian Fleet, but took no part in the assaults, nor did they co-operate with the land forces or the bombarding ships. This was geographically unnecessary, thanks to the proximity of Malta and the Cape Bon peninsula, and to the preliminary capture, for use as fighter airfields, of Pantellaria and Lampedusa.

The capture of Sicily paved the way for the assault at Salerno, early in September, 1943, with the immediate object of seizing the port of Naples. Salerno was very near the extreme useful range of shore-based fighters operating from the North of Sicily. It was this factor, among others, that influenced the selection of the Gulf of Salerno in preference to the Gulf of Gaeta, farther North, as the objective of the expedition. Spitfires, working from Sicily, could remain 20 minutes in the assault area; P 38's (Lightnings) one hour. It was aimed to maintain a force of 24 Lightnings and 15 Spitfires continuously over the assault area during daylight. But these aircraft could not be replaced in less than about 30 minutes if they became engaged in combat and were forced to jettison their long-range tanks. Ship-borne aircraft were therefore the only aircraft that could be relied on to meet waves of enemy aircraft attacking in quick succession. It was accordingly decided to augment the shore-based fighter cover with naval aircraft, and Force V, consisting of the escort carriers "Unicorn," "Battler," "Attacker," "Hunter" and "Stalker," was constituted and hurriedly trained for the job. To have the maximum number of ship-borne fighters available to cover the beaches it was necessary that the fleet carriers of Force H—the "Illustrious" and "Formidable," should provide the fighter cover for Force V.

The assault plan assumed that Monte Corvino airfield would be captured on D-day and put into operation for shore-based fighters on D+1. Force V was therefore only intended to operate for two days. There was, however, delay in securing Monte Corvino and, even after its capture, it was under artillery fire from the neighbouring hills. So airstrips had to be constructed nearer the beaches, and Force V had to operate for 3½ days. During that period, Force V flew an average of 220 sorties a day, maintaining an average patrol strength of 17 aircraft in the air throughout the day. Before withdrawing, Force V flew off 26 aircraft to operate from the strip just behind the beach at Paestum.

In this operation naval aircraft were used to provide day air cover over the assault area. Close support of the troops was the task of the shore-based fighters; but, because of the great distances of their bases, there was inevitably a considerable and unacceptable delay in answering calls for support. The lesson was clear: the provision of close support as well as air cover must be a naval task in the long range



assault. To meet impending requirements, therefore, selected naval fighter squadrons were trained in the multifarious tasks of close support. The choice of fighters rather than any other type was natural, since air superiority had first to be obtained before any secondary role could be fulfilled.

Subsequent landing operations in the Italian Campaign were all short range, and air cover and support were provided by shore-based aircraft.

The Normandy landings, in June, 1944, were covered and supported entirely from this island, although a large share of the bombardment spotting was provided by naval fighter squadrons operating from Lee-on-Solent.

#### THE INVASION OF SOUTH FRANCE

It was at the invasion of the South of France, in August, 1944, that we really find a fully specialized and completely equipped Naval Air Support Force; and it is only fitting, if I may be allowed to mention one name, that tribute be paid to the work of Admiral Bisset, to whom fell the intensive and arduous task of training this force and who so well and truly laid the foundations of its subsequent successes. The force for this operation consisted of seven British together with two American escort carriers, each carrying between 20 and 30 aircraft. In addition, shore-based aircraft, chiefly American, supported the invasion from Sardinia and Northern Italy. Time was available to train the two groups into which the carrier force was divided and some of our squadrons were attached to the 2nd Tactical Air Force in Italy for practical experience beforehand.

The shore-based Air Force Commander, under whose orders the force operated, had no previous experience of carrier-borne aircraft—at first sight the number of aircraft available in a carrier force appears, on paper, to be very small; they gain their effect by the mobility of their parent ships and by their ability to operate close in shore. He found, to his gratification and surprise, that he had at his disposal not only an unexpectedly powerful and efficient air support force, but, what was of greater moment, one that was capable of answering any call at the shortest notice.

As originally planned, the principal naval air tasks were reconnaissance, bombardment-spotting, and beach cover. The number of aircraft available, however, after these commitments had been met, allowed, thanks to the almost complete absence of enemy air opposition, for a heavy programme of fighter-bombing and ground strafing. Full advantage was taken of this. The amount of destruction wrought on the enemy's communications was impressive and proved an important factor in the rapid advance of the Army from the beach-head.

The valuable mobility of carrier-borne air support was illustrated when the "train" of the 11th Panzer Division was reported to be near the Franco-Spanish frontier, retreating to Toulouse. A carrier group was detached to attack this division from a position off the Spanish coast. Assiduous search failed to reveal any tanks, but a considerable amount of motor transport and other minor game was found lurking in cover and flushed.

The energy and gallantry with which attacks were pressed home is epitomized by the young pilot who returned to his carrier from strafing a road with a large section of tree impaled in his wing. Casualties were mercifully small and many of the missing-over enemy territory eventually returned to their squadrons with strange stories of their adventures. One pilot spent three days hidden by a French peasant in a chicken run and returned redolent of his enforced habitation. Another was rescued by the Maquis and, after a magnificent dinner, was offered the choice of bed, bridge or going out to shoot a German.



In this operation, from dawn on D-day until dusk eleven days later, Allied naval aircraft provided continuous air support throughout daylight hours. Many lessons were learned: the need for rest periods, both for aircrews, ground crews and Commanding Officers and other key officers; the need for reserves, both of aircraft and pilots; the need to keep close to the beaches to reduce transit times. The tricky navigational problem of maintaining a carrier group in position while turning into wind every 25 minutes or so dictated a convenient maximum of four carriers in each group and a circular destroyer screen. An exactly similar formation was evolved independently by the United States Navy in the Pacific.

With this operation, as with those American operations that were taking place about the same time in the Pacific, naval air support may be said to have definitely arrived, and I do not intend to describe in detail the subsequent operations of our Assault Carriers in the South-East Asia Command, which went on until the end of the War.

In the Pacific Campaign, the United States Navy used carrier-borne air support on an ever increasing scale and their island-hopping advances relied upon it entirely. The technique they evolved was identical to ours, but their greater carrier strength permitted a very much larger effort than we could develop and introduced a number of interesting technical problems of communications and control.

Aircraft of the British Pacific Fleet did not at any time give close support. Their role, until the collapse of Japan, was more strategic than tactical. During the Okinawa assault the British forces were occupied chiefly with the interdiction of the Sakishima Gunto airfields, thus covering the left flank of the assault. Operations proceeded for 54 days and many of the problems were similar to those met by a force of support carriers.

#### CONCLUSIONS

I would like, before ending, to mention a few of the salient points about Naval Air Support as developed by the end of the War. War technique changes quickly and much of what we know to-day is already obsolete; but some matters of doctrine may usefully survive.

It is absolutely essential, from the very start of planning any operation, to have the proper structure of command. In a long range assault, a senior naval officer is usually appointed as Air Commander on the staff of the Naval Assault Force Commander. At the same time, a Royal Air Force officer is usually appointed as Air Commander (designate), in readiness to take over from his naval *confrère* when the Royal Air Force build up in the assault area has sufficiently advanced. When this stage has been reached, the former Air Commander may become Assistant Air Commander (Naval) until the withdrawal of the Carrier Force. The duty of the Air Commander with the Assault Force is to interpret and translate the air requirements of the assault into requests for missions to the carriers, or to the Royal Air Force units concerned.

The Assault Carriers are generally commanded by a Flag Officer, who acts as a sort of garage keeper, supplying the needs of the Air Commander so far as he judges that he can do so with the forces available to him and according to the circumstances of the general situation. He may himself tactically operate one of the carrier groups; otherwise, tactical command may be delegated to the Senior Officers of groups.

It is vital to success that the Air Commander and the Flag Officer of the carriers should plan and work with the Naval and Military Assault Commanders and with



the Royal Air Force from the very start. These Commanders must try to get inside each other's skins and be absolutely *en rapport* with each other's intentions and with every phase of the operation. It is particularly necessary too that the training of the Naval Support Squadrons should be co-ordinated with the plan from the very beginning—and, in war, time is always short. I need hardly add that, if these Commanders are good ones, they will have good staffs, who will do the work and leave their superior officers free to think.

Second only in importance to the set-up for Command are the communications. They are based on speed rather than security and, nowadays, consist almost entirely of radio-telephony. The communications at the military end must, of course, be mobile; as also should be those of the Air Commander who must, in due course, proceed on shore with the military Commander. But they must also be reliable, although mobility and reliability together are sometimes unwilling partners in wireless sets.

Training and time for training are also essential, not only for the air squadrons, but for every bit of the jigsaw puzzle. Training works up to piecemeal and perhaps eventually complete rehearsals; and these are well worth the extra flying hours and the extra maintenance involved. But whatever is or is not rehearsed, a complete rehearsal of the communications should be insisted upon, including every line—naval and military, however insignificant.

We have seen that one of the most valuable characteristics of Naval Air Support is its mobility. It is well not to forget this in the planning and training stage. Intelligence must not be allowed to make magpie hoards of maps but should be encouraged to distribute them widely. Much time will be saved in briefing if the airmen already know their country like a book, and ways and means can be devised to maintain security. Intelligence must also be generous and maps must cover the widest possible area, otherwise a flanking or diversionary move by the carriers may find them "off the map." It sounds impossible, but, believe me, it has happened. Airmen require a lot of maps and high speed aircraft can cover a lot of ground.

That is all I have to say. I will not attempt to look into the future. The next war will not be nice if what we read in the papers is to be believed. I will only reiterate my opening remark, of the truth of which the past war has convinced me, namely the absolute interdependence, at all levels, of the soldier, sailor and airman—whether clothed in light-blue or dark—to the fostering of which, when the routine pursuits of peace tend to draw us ever further and further apart, no effort should be spared.

#### DISCUSSION

REAR-ADMIRAL R. D. OLIVER: The Lecturer spoke about the speed with which support was given to the Army during the campaign in the South of France. I should like to know the average time taken from the receipt of a call to the arrival of the aircraft over the target.

I should also be interested to know whether the aircraft would be provided from the cab-rank or from the deck, and what would be the distance of the carrier from the shore.

THE LECTURER: I was not present, and I do not think the cab-rank had been instituted in that force at that time. I may be wrong, but my impression is that calls for support were answered from the carriers and may have taken forty minutes before the stuff was over.

A cab-rank was developed not very long afterwards and the answering of calls for support, other than very ambitious ones, went on almost continuously.



CAPTAIN HEXT LEWES, R.N. : If I may speak from the point of view of an escort carrier in very small operations on the Burma coast, I think there we were in a position where we could get aircraft over a target in answer to a call within about ten minutes. But it is true to say that we were operating without any air opposition and close to the shore. We felt that the Army did not realize what strength they had at their call if they required it.

AIR COMMODORE N. L. DESOER : The Lecturer has referred to the need to relieve the Carrier Group in support of an assault landing in order to rest the aircrews and to refuel. Could he indicate how long aircraft carriers could continue in operation before they would require to be relieved ? Could they operate aircraft throughout this period by day and by night.

THE LECTURER : I can only tell you what we were doing at the end of the War : the average continuous period then was four or possibly five days operating by day only. After that the carriers retired to some quiet anchorage, perhaps for twenty-four hours absolutely clear rest, and then they went back again.

We had not developed continuous night fighter cover from carrier aircraft during the War. Originally our good friends the Beaufighters came to our aid if there were a need for night fighters, but continuous night fighter cover was not fully developed up to the end of the War.

COMMANDER I. G. ROBERTSON, R.N. : Is it desirable, in the Lecturer's opinion, that the Air Commander should have under his immediate control the allocation of aircraft both for support and cover ?

THE LECTURER : It is difficult to answer that question because the technique changes so much. I would, however, put it this way. The aircraft are produced by the carriers, and I suppose the senior officer of the carriers is the man who has the last say as to whether an aircraft will take off or not, on the advice of his air staff. Once it is airborne, it is handed over to the Naval Air Commander in Headquarters ship. If it is going on a covering mission he will turn it over to a Fighter directing ship. If it is going on a supporting mission it is probably answering a pre-arranged call and will be handed straight on to the commander concerned on the ground.

I have never acted as Naval Air Commander in Headquarters ship myself, although I have been in one as Assault Force Commander and have seen somebody trying to do it. I would say as a generalization that the more the Naval Air Commander can decentralise the better, because if he tries to control too much himself he will probably head for trouble.

WING COMMANDER J. H. LAPSLEY : If I may revert to the question of the Air Commander again : in an assault, even a long-range assault, you are likely to be within range of heavy bomber cover, which would constitute one part of the total air force. Then you have the R.A.F. units waiting to go ashore, which is another group. You have then the naval unit operating in the initial stages of the assault, which is a third group. It seems wrong, therefore, if I may say so with respect, to have a Naval Air Commander in the first place. Bomber Command aircraft play an important part in the assault, and shore-based fighters often patrol the sea communications back, it would appear therefore that only one Air Force Commander all the way through the operation is desirable.

THE LECTURER : I entirely agree with you. I imagine the reason is because the system grew up piecemeal during the War, and we started with no Bomber Command within reach. It was a naval technique and a naval officer was therefore in charge. It does not matter who is in command as long as he knows his stuff and is in sympathy with the aircrews, and is completely tied up with the plan. At the present time the organization is that a naval officer is in command when the Navy predominates, switching to the Royal Air Force when that ceases to be the case. The uniform does not matter as long as its wearer knows his stuff.



## THE CHAIRMAN

I do not think that the need for co-operation both on the highest and lowest levels stressed by the Lecturer requires any emphasis from me or anybody else. There is one point which arises from the lecture, however, to which I should like to refer.

One has to remember that in sending a force on a long range venture where it will not have the support of the Royal Air Force, the carrier-borne fighters will meet whatever the shore-based enemy fighters like to send against them. Therefore we have to ensure that the fighters we put in our carriers will be able to meet the enemy on equal terms from the point of view of performance. Of course the great difficulties attending that are manifest: the carrier-borne aircraft has to have folding wings, it has to have a strengthened undercarriage to take the shock of landing on an iron deck and, above all, it has to have a reduced landing speed. However, our endeavour must be to develop the design of carrier-borne aircraft so that they can meet the enemy fighters on as nearly equal terms as possible.

ADMIRAL SIR CHARLES LITTLE (*Chairman of the Council*): I know you would not like to go away this afternoon without showing your appreciation to the Fifth Sea Lord for presiding at this important lecture.

It is a matter of great satisfaction always to the Institution to have a member of the Board of Admiralty, the Army or Air Council as the case may be, in the Chair, because they not only dignify our proceedings, but they give approval to them as it were.

We also want to thank Sir Philip Vian for the comments which he has been good enough to give us. As you all know he interested himself in the Naval Air Arm during the last year or so of the War, and in the Pacific I believe he rose to that very high position which the Lecturer has described as the "Garage Commander."

The customary votes of thanks to the Lecturer and Chairman were carried with acclamation.



## ADMINISTRATION OF OCCUPIED AND LIBERATED TERRITORIES DURING THE 1939-45 WAR

By MAJOR-GENERAL A. V. ANDERSON, C.B., M.B.E.

**B**OTH during and immediately after the 1914-18 War, British armies in various parts of the world found themselves in occupation of conquered enemy territory under circumstances which necessitated the establishment of some form of temporary administration to carry on the legislative, executive and administrative functions which were essential for the well-being of the inhabitants and for the security of the occupying forces. Such a situation, although novel, was not without precedent, and the special relationship which must exist between the population of occupied enemy territory and the occupying forces had already been legislated for in the Hague Convention of 1907.

This Convention, starting with the assumption that the power of the State in occupied territories will have passed *de facto* into the hands of the occupant, proceeds to define certain "Laws and Usages of War on Land" for the guidance of the occupying Power in its actions and is little concerned, if at all, with the form which should be taken by the government or administration to be imposed by the invader. In view of the great variety of conditions under which the occupation of enemy territory may be effected, this limitation in the scope of the Hague Convention is understandable, and the form of the occupant's temporary government or administration has always been shaped to meet the requirements of each particular case. Thus in Palestine, after the capture of Jerusalem in 1917, a British military administration was established to govern the territory under British occupation, whereas in Iraq similar functions were carried out by a Civil administration, headed by a Civil Commissioner who was responsible locally to the Commander-in-Chief and who acted alongside, and in close co-operation with the heads of the military administrative branches.<sup>1</sup>

### NORTH AND EAST AFRICA

The British military successes in Cyrenaica and East Africa in 1941 raised problems very similar to those which had been met in Palestine and in Iraq a quarter of a century earlier, and a solution to these problems was found on lines very similar to those which had proved successful in the past. An organization was established (under the initial title of the Occupied Enemy Territories Administration) which was placed under the central control of a Chief Political Officer at General Headquarters, Middle East. As each separate territory was occupied, the Chief Political Officer appointed a Deputy in the territory who became responsible for conducting the administration in the name of the Commander-in-Chief in his capacity as Military Governor. The establishment in the field was placed upon a military basis and, in order to avoid some of the dangers of divided responsibility which had been apparent in Iraq from 1917 to 1920, and in view of the fact that all legal powers in the ex-enemy territories flowed from the Commander-in-Chief, it was decided that the War Office should be the Department in Whitehall responsible for its working.

As the campaigns in North and East Africa progressed, so the organization developed until the British Military Administration (as it was finally entitled), having handed over to the Civil Government concerned the functions with which it had

<sup>1</sup> For a detailed account of the organization and functioning of the Civil Administration in Iraq see "Loyalties, Mesopotamia 1914-1917" and "Mesopotamia 1917-1920" by Lieut.-Colonel Sir Arnold T. Wilson, K.C.I.E., C.S.I., C.M.G., D.S.O.



temporarily been charged in Ethiopia and Madagascar, finally found itself entrusted with responsibility for the control and administration of six separate territories—Italian Somaliland, British Somaliland, Eritrea, Cyrenaica, Tripolitania and the Dodecanese.<sup>2</sup> At the time of writing, responsibility to Parliament for the administration of these territories still rests with the Secretary of State for War and is exercised by him through the Commanders-in-Chief, Middle East and East Africa, respectively.<sup>3</sup>

So far the problem had been comparatively straightforward and had been of a nature with which the British character, with its long experience and its long tradition of Colonial administration, is perhaps peculiarly fitted to deal. Conditions undoubtedly varied greatly between the different territories, but the basic problem remained the same, and the comparatively simple types of economic, social and administrative structures of the territories were such as could be rapidly reconstructed. Many more complications and many more problems of much greater magnitude would have to be faced when the progress of the War took our armies into Europe.

#### THE CONTINENT OF EUROPE

The campaigns which were to follow were not to be fought in primitive African colonies, but in modern Europe and amongst all the complexities of social, industrial and economic organization upon which a highly civilized community depends. Not only was the civilian population (which would be measured in millions) entirely dependent for the necessities of life upon the working of a delicate piece of economic machinery, but the very existence of this machinery depended upon the efficiency and adequacy of the normal facilities of civilized life (ports, railways, communications, water supply, power and light, etc.), upon which facilities the invading armies would necessarily make very great demands. Not only had Europe's pre-war economy been diverted by Germany to meet her war needs, but it was distinctly possible that, if faced by defeat, the German armies would carry out a policy of deliberate destruction. Not only was it essential that the liberation of Allied territories in Europe should bring succour and relief to their despairing peoples, but it was also certain that if disease and starvation were to reign unchecked, whether in Allied or in hostile territory, the attainment of the military object of the defeat of Germany would be seriously prejudiced.

To meet the requirements of this new situation, action was initiated on parallel lines in both the American and British Armies and, since the operations in Europe were to be conducted on a combined basis under the direction of the Combined Chiefs of Staff and under the immediate control of a Supreme Allied Commander, the necessary combined machinery was established both in Washington and in the Field. On the British side a new organization came into being under the somewhat ambiguous title of "Civil Affairs," and the Permanent Under-Secretary in the War Office was

<sup>2</sup> British Somaliland does not, of course, come within the category of "occupied enemy territory." It was decided, however, for a variety of reasons to retain this territory under military administration; constitutional difficulties were surmounted by the issue of an appropriate Order in Council. Similarly, certain Ethiopian territory bordering upon British and Italian Somaliland was retained by agreement with the Government of Ethiopia under British administration.

<sup>3</sup> For a description of the early activities of the British Military Administration in Africa see "British Military Administration of Occupied Territories in Africa—1941-43." (Command Paper 6589—January 1945).



designated as the Member of the Army Council who would be responsible for its direction. Under the Permanent Under-Secretary, a new and self-contained Directorate of Civil Affairs was established which was given the task, within the War Office, of administering those enemy territories in Africa which had already been occupied and also for dealing with all questions affecting civil administration in territories likely to be liberated or taken from the enemy in future.

Urgent steps were immediately taken to provide the necessary planning staffs at the Headquarters of the military formations concerned with future operations in Europe, and to recruit the large numbers of additional officers who would be required to augment these staffs and to form the executive teams for work on the ground when operations commenced. Special attention was paid to the provision of facilities whereby the newly recruited staffs could be trained (as far as that was possible before the event) in the performance of the somewhat unusual duties they would be called upon to carry out and, as was inevitable, heavy calls were made upon the existing cadres of experienced officers already serving in the military administrations in Africa.

As regards the type of organization to be set up in the field, it was obvious at an early stage that, apart from any political considerations, shortage of manpower, especially of technical and functional experts, would rule out any possibility of adopting a policy of direct administration on the African model, and that it would be necessary to utilize to the maximum extent possible the local indigenous administrative machinery, which might require to be revived and resuscitated after the shock of battle but which should be encouraged and assisted to carry out its normal tasks. Allowance had also to be made for the totally different relationship which would exist between the armies and the civil population in liberated territories where the provisions of the Hague Convention of 1907 would have no meaning and where there could be no question of the invading armies establishing any form of Military Government or Military Administration, except by prior agreement with the local Government concerned. Finally, it was essential that the same organization which was to be charged with conducting the relationship of the armies with the civil population of liberated territories in the early stages should be sufficiently adaptable to enable it to form the basis of the organization which would be responsible for the military government or military control of Germany at a later date. What was required therefore was an organization which would cover the theatre of operations from the base to the forward areas, which would be sufficiently flexible to conform to the movements of the armies as they rolled forward into Europe, and which would be sufficiently adaptable to cope with the changing conditions which would be met in combat zones and in rear areas in liberated countries and in the territories of enemy Powers.

Although the name "Civil Affairs" had been adopted (largely to emphasize the fact that there was no intention of endeavouring to impose any form of Allied military government upon liberated territories), the new organization had been called into being to discharge a strictly military function and was given no responsibilities for relief or rehabilitation in Europe beyond those which strict operational requirements made essential. It was not that the desperate needs of Europe were not fully appreciated or that the deepest sympathy was not felt for her suffering populations, but the War was being, and would continue to be, conducted against a background of world shortages—shortage of raw materials and of productive capacity, shortage of shipping and shortage of facilities of all descriptions—and, until it had been won, the problem would be to ensure that the barest minimum requirements necessary



for its successful conclusion could be met. The primary function of the new Civil Affairs organization, therefore, was to assist in the attainment of the main object of defeating the enemy by ensuring that operations were not hampered by starvation, disease and unrest among the civil population and by helping to make available, to the maximum extent practicable, all local resources which could help these operations to success.

One of the most intricate problems which had to be solved in the early stages was that of ensuring that the necessary supplies would be available in sufficient quantities, and at the right time and in the right place, for the relief and maintenance of the civil population behind our lines. Forward planning had to take into account the necessity for exercising the most rigid economy over the whole field of production, shipping and demands upon port facilities and means of internal transportation in invaded Europe. Although the extent of military responsibility in respect of these relief supplies was definitely limited, the basic necessities of life for at least a proportion of the population would have to be immediately available (i.e. food, clothing, soap, medical supplies and fuel) and the means would also have to be at hand for the early restoration of those public services without which living conditions would rapidly deteriorate (e.g. water supply, sewage disposal, electricity and gas supply, local transport, etc.).

At a later date additional requirements would have to be met, as a partial restoration at least of the indigenous resources of the countries would be called for (e.g. agriculture, fisheries, food processing plants, etc.) while the revival or maintenance of general productive capacity would be of direct assistance to the war effort, would show dividends in the shape of reduced demands for imported supplies, and would also be a means of keeping the civilian population in gainful employment. The overall requirements covering this wide field had to be estimated well in advance of the commencement of operations, and phased demands for the provision of the necessary supplies had to be placed upon the agencies of production even before the operational plans for the invasion of Europe had taken firm shape.

As operational planning progressed, allocations of shipping space had to be made, along with the necessary arrangements for calling supplies forward, for handling them through ports of entry and for distributing them to the population, always in the knowledge that every ton of relief supplies called forward would mean an equivalent reduction in the availability of warlike stores and equipment needed for the direct support of the fighting soldier. Once operations had begun, actual calling forward and issues of relief supplies were based upon proved deficiencies as they were found to exist after the maximum utilization of all local supplies had been taken into account and, as a measure of what was achieved, it may be recorded that, by the end of June, 1945, the combined military authorities had arranged to ship to those European countries which had been within their sphere of responsibility over nine million tons of relief supplies.

This is not the place for a detailed account of the many growing pains of Civil Affairs, nor of the details of its organization and relationships with the other branches and services in the Army. Nor is it the place for the history of its operations and achievements in Italy (where the conferment of co-belligerent status raised additional complications), France, Belgium, Holland, Luxemburg, Denmark or Norway, or for a description of how it transformed itself into the instrument of Military Government as the armies fought their way into Germany. Each of the liberated territories in North-West Europe presented its own particular problems, and the majority of them,



in turn, were helped through the shock of battle and assisted to re-establish their administration and their national economy while continuing to exert their maximum efforts in pursuance of the common object. Even after the collapse of Germany much remained to be done, and the first assistance that was rushed to the aid of stricken Holland was the result of military planning and of military provision. The Allied armies in Europe not only drove the German oppressors back over their frontiers, but they also laid on a firm basis the framework for the re-establishment of the social and economic well-being of the new Europe. In the latter part of this great achievement, the Civil Affairs organization of the Allied armies played an essential part.

#### THE FAR EAST

Even before the invasion of Europe had started, much thought had already been given to the requirements of the Far East and, while the armies were still fighting their way through Italy and France, planning, recruiting and training for this next stage of the operations were in full swing. It was not only that physical conditions in this new theatre of operations would be totally unlike those in Europe, with differences of climate, distances, language and habits of mind, but it was clear that the basic approach to the problem would have to be different. In Africa we had been called upon to set up a temporary administration over a comparatively primitive people living in a sparsely inhabited and largely undeveloped territory, while in liberated Europe the primary object had been to re-establish or maintain the local indigenous administrative machine and to clear the way for the return of the national Government. In the Far East, however, the Japanese had already driven out or destroyed the Government and the machinery of administration which had existed before the War in the areas now under their rule and, as had happened in Africa, we would have to be prepared to build up a new administration from the very foundations and to ensure that it was in a position to function without delay as soon as each area had been cleared by the fighting troops.

Unlike the ex-Italian colonies in Africa, however, an important part of the Far Eastern theatre of war was British territory, or territory under British protection, and it was essential that, as far as military conditions would permit, the revival of these territories, the rehabilitation of their inhabitants and the re-establishment of their industries should be pressed forward from the earliest possible moment. Further, the Far East contained large areas which belonged to or were protected by other Allied nations and, while British responsibilities in these areas would be of a limited operational nature, it was most desirable that our Allies should be given the same opportunities for bringing succour to their territories as we were planning to provide for our own.

Owing to the fact that the war against Japan was still in progress, it was decided on the justification of operational necessity that all legislative, executive and administrative authority in these liberated territories would in the first instance be assumed by the Supreme Allied Commander, South-East Asia,<sup>4</sup> and that he would be assisted in the exercise of this authority by a Chief Civil Affairs Officer in each territory. This Chief Civil Affairs Officer was to be the head of the Military Administration to be provided for the territory, these Administrations being composed of British personnel

<sup>4</sup> Although South-East Asia was a combined command in that operations were directed by the Combined Chiefs of Staff through the agency of the British Chiefs of Staff, Civil Affairs in this theatre was not a combined responsibility.



in the case of British territories and of personnel of the nation concerned in areas such as the Dutch East Indies or French Indo-China.<sup>5</sup> It was further decided that in British territories, while the Supreme Allied Commander and the military authorities would be responsible for the relief, well-being and resuscitation of the peoples and of their administration up to the standard which military considerations demanded and military resources permitted, the Chief Civil Affairs Officers in those territories would have an additional direct responsibility to His Majesty's Government, through the department of State concerned, for further relief and rehabilitation up to the maximum point which could be attained with such additional resources as could be made available and which the exigencies of the military situation would permit. This principle of "dual responsibility," although it met an obvious requirement and gave rise to no great difficulties in practice, led to certain complications in planning and organization.

Each of the British military administrations concerned (for Burma, Malaya, Hong Kong and the Borneo group of territories) had initially to be planned and organized primarily from the long-term point of view of the post-operational period, and in this initial planning the co-operation of the interested civilian departments (i.e. the Burma and Colonial Offices) was essential. Once this initial planning had been completed, the embryo Administrations had to be transformed into military organizations and had to be made capable of functioning under operational conditions as an integral part of the military machine of which they were to form part. Finally, their post-operational organization had to be temporarily broken down and re-assembled so as to fit into the operational plan and enable them to meet the important though less technical requirements of the operational phase (which might indeed last for a considerable period) prior to reverting to their original shape once liberation had been completed.

As in Europe, early action had also to be taken to ensure that the necessary relief supplies for the civil population would be available as and when they were required, the first essential being the preparation of estimates of requirements upon which the authorities responsible for provision could get to work. In the preparation of these estimates, the principles which had proved their value in Europe were also applied to the Far East but, in these territories, there were obviously many special considerations for which allowance had to be made. The basic requirements of life of the different nationalities in Europe differ only in a minor degree, whereas the differences in the requirements of peoples of Asiatic countries may be considerable, especially when the provision of articles such as industrial tools and agricultural implements is under consideration. The same limiting factors of shortage of productive capacity, shortage of shipping and other transportation facilities would continue to apply in the Far East, and there was the same necessity for phasing production and programming shipments in accordance with the best forecasts that could be made as to the operational developments which might be expected.

As events turned out, the Japanese surrender, although it falsified many of the forecasts upon which the provision of supplies had been based, did not mean that the flexibility of organization which had been introduced to meet the needs of the operational phase had been wasted. Burma had been liberated, the liberation of

<sup>5</sup> The above statement to some extent over-simplifies the situation. The status of the Supreme Allied Commander in the colonial territories of other nations was in fact, as in Europe, regularized by a "Civil Affairs Agreement" entered into by His Majesty's Government with the Government concerned.



Borneo was in progress and the various task forces (each accompanied by its Civil Affairs element) were on the move towards Malaya before the surrender, while the actual return of British authority to Malaya and to Hong Kong was effected under conditions which were operational in all respects, except that Japanese resistance had ceased. The surrender did mean, however, that the initial phase could be considerably shortened and that the British Military Administration in each territory could set about its wider task at a date considerably earlier than could otherwise have been expected.

It is not proposed to describe here in detail the achievements of Civil Affairs in the Far East or the part played by the naval, military and air forces in re-establishing law and order and in rescuing the very large numbers of Allied prisoners of war and refugees in non-British territories. There was much to be done. Not only had the internal problems of each individual colony or territory to be dealt with, but there were even greater and more pressing problems related to the economy of South-East Asia as a whole. Rice, the staple article of diet and the staff of life for millions of the population, was in desperately short supply, necessitating urgent action to increase output and to ration available supplies in accordance with needs. Shipping, port capacities and means of internal transportation were insufficient to meet requirements and had to be controlled, maintained and developed. Local surpluses of various commodities had to be steered towards areas of deficiency and the means provided whereby the cross-current of normal trade movement could be resumed. As a background to all this was the continued necessity for maintaining, and in many areas for building up, the operational capacity of the armies so as to ensure that the many potential dangers in the situation would be held in check.

Meanwhile the military authorities, both in London and in the theatre, were fully appreciative of the desirability of handing over the task to the civil authorities at the earliest date that was possible from the operational point of view and practicable from the point of view of the incoming civilian governments. The problems of the transition from military to civil administration were made the subject of close study in all the territories concerned, and plans were drawn up to ensure that this transition could be effected with the minimum dislocation of functional efficiency. The Supreme Allied Commander was able to hand over his authority in the greater part of Burma to the Civil Government in October, 1945 (although portions of the Civil Affairs organization remained to assist the civil authorities to a later date), but it was not until April of the following year that Singapore and Malaya could be transferred from military to civil administration. Hong Kong, Sarawak and Brunei followed suit in turn and the last British Military Administration in the Far East hauled down its flag in North Borneo on 15th July, 1946. A period of which the Army can be proud and for which the liberated peoples had reason to be grateful had been brought to a close.

#### CONCLUSION

No attempt has been made in this short account to give other than the broadest description of the activities of the Civil Affairs organization during the 1939-45 war, nor has any attempt been made to summarize the lessons which have been learned or to suggest the steps which should be taken to ensure that they are borne in mind against a future contingency. These lessons are being, and will continue to be, studied and it is hoped that, in due course, a more detailed account of what was done in the various theatres of war will be made available. Enough has been said, however,



to indicate the wide variety of the problems involved and to suggest the difficulties which would be likely to accompany any undue rigidity of methods.

One lesson which appears to stand out, however, is the necessity, at any rate in the complex conditions of modern civilized countries, for the closest possible integration between whatever organization is to be made responsible for "Civil Affairs" and the normal Command and Staff organization of the Army at all levels. Although it may be possible to carry on a Military Administration in a primitive and comparatively undeveloped territory alongside, but independent of, the military hierarchy, any such system will become more and more liable to breakdown as the economic and administrative structure of the territory in question becomes more complex. In a primitive area the armies are forced to provide their own facilities and the requirements of the civil populations are small. In a highly developed and densely populated area the barest minimum "disease and unrest" requirements of the population begin to assume large proportions, and the armies will require, and must be given, a predominant claim upon the use of the facilities without which the civil population cannot exist. Under these circumstances, not only must the balance between conflicting demands be maintained with the utmost delicacy but, once the balance has been struck, its various components must receive their allotted degree of priority throughout the whole military chain of command and over the whole field covered by the various military administrative agencies. This necessary allocation of priorities will only be achieved and maintained if the integration between the responsible agencies is sufficiently complete.

There are further arguments which could be advanced in support of this claim for integration based upon the operational necessity of ensuring the control, co-operation and well-being of the civil population in a theatre of war. Even from the narrower aspect, however, all experience during the Second World War has shown that the civil populations of liberated territories have stood to gain when their well-being became a military, as opposed to a specialized, responsibility. The Army may necessarily have had to plan on an austerity basis but, when it came to the point, the assistance which it rendered to the suffering peoples of Africa, Europe and the Far East was measured by the requirements of the needy and limited only by the hard exigencies of war.



## DISARMING THE JAPANESE FINANCIALLY IN SOUTH-EAST ASIA COMMAND

By LIEUT.-COLONEL T. H. SWEENEY, Royal Army Pay Corps

**I**T must be rare, if not unique, for an article of a financial nature to appear in this Journal, and the ingrained belief of most officers in the Services that anything to do with finance must be dull has probably made the bulk of readers hastily turn on to the next article after reading the heading. Amongst those who have decided to risk it and read on, it is hoped that some will find the dry bones of finance coming to life a bit. They may even produce a surprising amount of information useful to future commanders of victorious armies in occupied territories, and to their staffs.

The Japanese Southern Group consisted of separate armies in Burma, Malaya, Siam, French Indo-China, Sumatra, Java, The Outer Islands, Borneo and New Guinea, and the whole came under the supreme command of Field-Marshal Terauchi, who had his headquarters at Saigon in French Indo-China. This was the opposite number to our own Supreme Allied Command, South-East Asia (S.A.C.S.E.A.) Headquarters of Lord Louis Mountbatten in Ceylon, and the distance between the two on V.J. Day in August, 1945, was some 3,000 miles. Communications were far from good, so Lord Louis sent S.A.C.S.E.A. Commission No. 1, under Major-General D. D. Gracey, to Saigon in September to give orders in his name on the spot to Field-Marshal Terauchi, and General Gracey was given a mixed force of all arms to enforce these orders, to deal with the Japanese surrendered army in French Indo-China, and to liberate our prisoners of war and internees as well. The writer was appointed Pay Adviser to this Commission and Force Paymaster of the forces in French Indo-China, with a general directive to make himself useful and to find out what he could about the Japanese pay system.

At that time all that was known about Japanese finance in S.E.A.C. was that they had flooded all the countries occupied, except French Indo-China and Siam, with their "occupational" currencies. The exceptions were also suffering inflation, but this was due to excessive printing of their own currencies.

Our intention was to declare all monies used by the Japanese in S.E.A.C. to be illegal and to replace them at once by British Military Administration currency or by the issue of new types of national currency, and this was done except in French and Dutch territories where the Governments concerned would not let us do it. The result was to break the power for the future of the Japanese to use money in their possession for subversive activities, or to leave behind financial "Fifth Columns," everywhere except in French Indo-China and the Netherlands East Indies, where the fact that they could still do so does not seem to have been fully realized at first. The Japanese made good use of the large sums of legal currency they still controlled in both countries for stirring up trouble. It is possible, and indeed likely, that they also used a good deal for such long-term ends as to retain useful friends and a grip on trade in those parts, and so at least partially to "win the peace." In any event these were matters that deserved finding out and we had no organization or staff laid on to do it with, though it will be seen later that the writer's "bump of curiosity" led to some rather surprising discoveries.

Let us start the story at the beginning and deal first of all with French Indo-China and then pass on to the Netherlands East Indies.



## FRENCH INDO-CHINA

When we flew in to Saigon one of our first moves was to seize the Yokohama Specie Bank, which was still open under Japanese management and had Japanese guards. The staff were placed under arrest and given thirty seconds to leave the building; then we took over all keys and mounted a guard from the 20th Indian Division over the doors.

This bank was the principal link between Tokyo and the finances of French Indo-China, and the suddenness of our move prevented any systematic destruction of its files and records, as well as of certain correspondence with Tokyo that was never intended for British eyes. Some of these financial statistics were vital to investigations made later and we could have done little without them.

The principal strong-room of the bank, which contained the bulk of its cash assets, gave us a bit of trouble at first because the Japanese had jammed the double combination locks of its eight-inch steel door, and all efforts by the Japanese Manager and cashiers failed to open it. The Manager was given 24 hours in which to get it open with the alternative of being "handed over to the Military Provost Staff Corps until you reach a more amenable frame of mind." He must have imagined that the M.P.S.C. could show the Kempei-tai (the Japanese "Gestapo") a thing or two, for he returned a few hours later with a four-foot high Chinaman who got the locks to work in ten minutes and completely shattered our belief in the ability of a Chubb's strong-room door to keep out anything! It was as well that we did not have to use explosives since seventeen million piastres were found inside. At the time of the surrender the piastre was nominally worth one shilling and the Dutch guilder two and sevenpence halfpenny.

Our Intelligence was closing down as first priority any Japanese firms suspected of indulging in subversive activities, and our researches into the accounts of this bank soon helped us to assist them with the names of other firms which deserved early liquidation.

Our original Directive gave orders that the Japanese forces were to be moved to concentration areas and disarmed as quickly as possible; and shortly after flying in we received further orders to make them declare all their cash assets, bullion and valuables. These were to be "frozen" until we could take them over and were only used with our Commander's permission. There were about 80,000 Japanese troops in southern French Indo-China, scattered in groups over an area of about 600 miles by 400 miles of country infested with armed Annamites in open revolt, and Saigon itself was practically in a state of siege, so this was easier said than done. After considerable pressure, however, Field-Marshal Terauchi declared his assets six weeks later—in mid-November—to be about 77 million piastres and requested authority to spend 76 millions of them on maintaining his men until the end of December. He was allowed four millions for that job, with all expenditure to be audited by the writer, and managed to do it, but only after we had removed the remainder from Japanese pockets into the safer custody of the Royal Army Pay Corps! How this removal was done is described later. The Japanese troops had spent 30 millions on themselves during the six weeks delay and were now to learn that batmen, coolie labour and living off the fat of the land were things of the past.

Early in November we had received orders to remove all spending power from the hands of Japanese military and civilians but, after doing so, it was impossible to feed the former ourselves and we had to allow them just enough cash each month to buy



their own food. To carry out our orders satisfactorily it was necessary to discover how much currency was in circulation, how much of this was in Japanese hands, and who had it.

The currency still used was the pre-war piastre issued by le Banque de l'Indo-Chine and the only thing wrong with it was that the amount in circulation had increased enormously and so was forcing up prices and enriching a roaring Black Market. The notes were numbered and we were able to find out pretty easily that the amounts in issue had increased progressively from 186 millions in September, 1939, to 338 millions by the opening of the Japanese War, then to 1,550 millions on Japanese orders by March, 1945, and had spurted to 2,350 millions in the remaining five months before they surrendered.

This last jump at once raised suspicions as to the reasons for it, and it did not take long to discover that the Japanese forces had drawn 615 millions more than their normal average during those five months. Of this amount 256 millions had been withdrawn, together with all bank balances amounting to some eighty millions, actually on the day of surrender by Field-Marshal Terauchi's orders, and a further 112 millions only a fortnight earlier.

All this seemed a little fishy, so we called in all Japanese military accounts and proceeded to analyse them. This meant auditing over a ton of accounts written vertically in Japanese script with the help of interpreters, and it proved quite a job; but two months later their accounts for the past four years in French Indo-China were available with all expenditure neatly tabulated month by month under main headings.

These proved that the Japanese had helped themselves to six months pay on the date of surrender and bought enough food for about a year. They had spent 52 millions on fortifications during the last six months, together with 41 millions on aerodromes and 105 millions on supplies; all of which were intended to provide for a "last ditch" stand in French Indo-China. The Japanese had sent 205 millions to Hanoi in North French Indo-China to maintain forces and stir up trouble there, and had paid out 238 millions to various firms and businesses, whilst we were unable to trace what had happened to 145 millions somewhere in South French Indo-China owing to lack of staff and time before the Commission was withdrawn. We did, however, find most of the people who thought they were going to use it, and got a number of them put "behind the bars" to contemplate life. The amounts which the Japanese originally claimed to have spent on fortifications, aerodromes and supplies proved to be far too large, and they hid very considerable sums which had been "put to ground." The 238 millions paid to Japanese firms included 104 millions paid *after* the surrender and it was decided to find out whether it all covered services rendered in the past, which didn't matter, or how much of it was for services to be received in the future, which mattered a lot.

We had no desire to see the Japanese win the Peace, after losing the War, so we then tackled auditing the accounts of the fifteen biggest firms concerned and got the French to shut down all their branches which we could reach. This drew the sting out of their tail but had to be done gradually, as these firms had a strangle-hold on the distributing and retail trade of French Indo-China and the whole country would have had its trade frozen, and might have starved, if we had left a sudden void by closing them all at once without making arrangements for others to carry on with their business.



The audit of these firms meant more wrestling with Japanese figures, but it helped us to find the people mentioned above and also brought to light certain Chinamen who were holding sums of one million piastres upwards "on behalf of the Japanese Army." It also showed that Japanese firms got 238 millions from military funds out of their total turnover of 298 million in 1945, and that the Army put in money whenever the civil firm had a debit balance. The firms had no more right to be called "civil firms" than Woolwich Arsenal has; they came in just before, with or just after the Army and were really R.A.S.C. and R.A.O.C. disguised as civilians. This suited the Japanese book better than putting them in uniform.

At the same time as all this was going on, the operations carried out by the 20th Division and by French troops, who were now arriving in large numbers, had given the Annamites such nasty knocks that it became possible to withdraw the Japanese gradually from areas which the French could take over; and it at last became possible to disarm the Japanese Army and Navy both physically and financially.

By this time the Japanese had had over 500 casualties whilst fighting with us, and our own fellows, who had looked upon them as equivalent to vermin in Burma, were now almost comrades-in-arms and were a bit reluctant at first to help us skin them financially, though they saw the point of getting the weapons and, later on, they caught the spirit of the chase. General Gracey, however, issued firm orders that it was to be done. The writer worked out a "drill" for getting and accounting for the money, and went on tour round our brigades "putting it over" and telling infantry officers how to collect the stuff and what to do with it. No instructions had then reached French Indo-China as to the ultimate disposal of this booty (in fact the answer to this is not yet known at the time of writing) or as to the degree of control necessary, but fortunately the "drill" had covered the possible necessity of knowing exactly "what had been taken from whom," since orders to this effect were sent us after the whole job was finished. Sixty thousand Japanese were dealt with in a fortnight, and the remainder as and when they reached the areas we controlled.

Our final reckoning showed that we had got hold of nearly eighty million piastres and many millions of other currencies, which brought the total to well over a hundred millions, together with great quantities of bullion and valuables, and the Force Paymaster had to act as custodian of it all. In addition we recovered about 35 millions from Japanese civil firms which we passed over later to the French custodian of enemy property.

The Japanese took the philosophical view that if we did not skin them the French or Americans would, and they gave no trouble over the affair. One of many humorous incidents which occurred was when it was discovered that 46,000 piastres and 37,000 Burma rupees had been taken off a Japanese private. The writer at once said "Take his trousers down until he says where he got it all" and a grinning messenger returned with the reply that "he" had turned out to be a "Comfort Girl."

These Comfort Girls form an integral portion of the Japanese forces and are on the scale of about a company strength to a division. They march with the Army and often fight as soldiers, but they are given some of the very limited transport available for their feminine clothes and finery. Unlike wives they are usually treated with every possible consideration and are graded as "No. 1," "No. 2" or "No. 3" for their earnings between 6.30 and 11 p.m. on what might be termed trade rates or proficiency pay. A most entertaining book could be written about them, but it is enough to say here that from 2.30 to 6.30 p.m. they are on the ration; from 6.30 to 11 p.m. on trade rates; and after that hour "on the make."



Far from humorous at the time, however, was the discovery that the Japanese accounts for French Indo-China would not balance at first by nearly 100 million piastres. The reason eventually turned out to be that the Japanese had intended all along to replace the currencies of all countries conquered by them with "yen" after their final victory. They wanted these territories to form one economic whole without trade barriers or inequalities between the exchange value of their different currencies, so they decided to consider from the first in their military accounts that all these currencies were of similar value and they used no conversion tables at all, but counted all currencies of South-East Asia alike. Thus a note for five of anything counted five to them, whether it was for rupees, bahts, guilders, Straits dollars or piastres. This may have been logical, but it was the devil and all for the two R.A.P.C. officers who were analysing the accounts before they found it out, and at times it led to infuriating difficulties.

Once it was known, we found the accounts to be meticulously accurate, and it became obvious that the standard of financial honesty required from all ranks by the Japanese pay system must have been astoundingly high. The essential difference between the outlook of the Japanese armies and our own concerning their pay was that the former considered themselves lucky if they got it, while ours were much annoyed if they didn't! Without suggesting that our fellows were fighting principally for money, it cannot be denied that they were determined to get all they were entitled to; whilst money matters seem to have been of small moment to your Japanese officer or soldier, who considered that he was honoured by being given the chance to fight for his Emperor or, better still, to die for him. When one realizes that a Japanese Colonel (who would rank as a Brigadier in our forces) got about the same as a British Sergeant-Major; that Field-Marshal Terauchi himself only got about £750 a year, and that the average private got twelve shillings a month, all of which includes war bonus, it is easier to see that there was not a great deal to get excited about.

Their system of pay is designed to give the minimum of paper work and nothing could be simpler to work, or easier to be fraudulent in, yet fraud is almost unknown in their Services. The lack of consideration it shows for the officer, soldier or family would ruin the morale of our own forces in a month and the temper of the House of Commons in an hour; but it suits the Japanese mentality.

#### NETHERLANDS EAST INDIES

S.A.C.S.E.A. Commission was withdrawn from Saigon in February, 1946, and the writer was posted to the Netherlands East Indies as Force Paymaster, Allied Forces, Netherlands East Indies, whose Headquarters were in Batavia. He found that the Japanese occupational guilder was still the accepted currency of 98 per cent. of the hundred million inhabitants of those Islands and so was naturally interested to discover whether any financial Fifth Columns had also been organized in them by the astute Japanese Intelligence Branch.

Once again it was necessary to find out what total of occupational guilders had been printed and whether the lot could be accounted for, but this was a much tougher nut to crack this time since the notes bore no serial numbers or any evidence of any control over the numbers printed. The Dutch financial people had been endeavouring to get the right answer to these questions for six months and had eventually decided that probably some three thousand million Japanese guilders were in circulation. They did not seem too sure of their figures, however, so we set to work at once on the



Japanese military and naval accounts in both Java and Sumatra and decided to see for ourselves. We tried a new angle and dug out all orders for the printing of notes and the receipts for getting them from the printers.

This step soon proved that the real total in circulation or in Bank vaults in Java and Sumatra alone was now over 8,242 millions, as against 380 millions before the Japanese arrived, and the additional amount in the Outer Islands (Celebes, Bali, Lombok, etc., etc.), whose figures we had no opportunity to discover, might well have brought the total to nearer to twelve than to three thousand million guilders. This was a bit of a shock to the Dutch who had offered to purchase occupational guilders at 3 per cent. under the impression that there were only three thousand millions in existence.

During this part of our investigation we found out too that the Japanese had printed in Java the colossal sums of 7,567 million Straits dollars for Malaya, 5,384 million rupees for Burma and 482 million Baht notes for Siam. All these no doubt helped the inflation in those countries and some of them may possibly have been used to buy up control of businesses, oil or goods before we rendered them valueless.

For all the currencies mentioned we could now give the exact quantity of each denomination of note printed, the place and date of printing and its destination. We also found out how much of these currencies had been printed in Japan and imported into Java from there; but we could not get at the information we wanted from the Outer Islands. For a month or two we were unable to account for some twelve hundred million guilders in Java but we eventually ran the whole lot to earth and could now say that no money was still hidden by the Japanese in that island.

Sumatra was quite a different story. The 25th Japanese Army there had imported 1,052 millions from Java just before they surrendered, notwithstanding the fact that they already held the more than ample reserve of over a thousand millions. We could not trace about 1,480 millions that had "gone to ground" in Sumatra, but we did find out that Japanese military lorries had removed 651 millions of this somewhere up-country between 27th August and 10th September, 1945, from banks in Palembang, without making any entries in the books of the Banks.

Whether they held the remainder or handed it over to the Indonesians is anybody's guess; we failed to prove it. This failure was partly due to delay by the 25th Army in replying to our questions, but principally to the speed with which the surrendered armies were being returned to Japan during the Summer of 1946, and to the permission given to them to take their accounts with them. By the time we discovered who exactly we wished to question the men had sometimes gone already; at others their books had and, towards the finish, we could find neither men nor books unless we had been able to name the men in time. The search was a race against time and the last boat for Japan.

In spite of this hurry it proved possible to analyse the uses to which all monies correctly accounted for had been put by the Japanese 16th Army in Java and the 25th in Sumatra and it was found that in both countries a very similar policy had been adopted to that in French Indo-China. Both Armies in the Netherlands East Indies had helped themselves to nine months bonus of pay just before the surrender and had laid in about two years supply of food, much of it after the surrender and even after the arrival of our troops, and they were obviously determined not to go hungry.

Towards the end both Armies had spent very heavily on fortification, arms and ammunition. It was surprising to find 208 millions spent on fortifications in Sumatra



as against 96 millions in Java, since the accounts proved that the latter was the main base for guns and ammunition, as well as for the medical treatment of sick and wounded.

Japan had received immense supplies of raw materials (chiefly oil, rubber and coal) from Sumatra so long as her ships could sail the seas, which meant to about September, 1944, and about one third as much from Java. This was to be expected since Sumatra and Celebes are the rich plums of the Dutch Empire and not Java, contrary to public belief, for Java has always been an economic liability to her Sovereign Power. The Japanese in Java spent quite a bit of money on their internees, but in Sumatra practically nothing, which goes some way to explaining the deplorable state of starvation in which we found them.

A host of other matters, particularly concerning aerodromes and fortifications that should be of considerable interest to Intelligence, came to light through the accounts, but space does not allow of any mention here. Enough has been said to show that the rummagings of an inquisitive pen-pusher may on occasion be quite valuable to "G" and "I" staffs as well as to "Q" and the Medicals (we found opium worth fifty millions in French Indo-China); whilst the reverse is also true and makes it worth while to keep the financial people in the picture.

It had not been possible, owing to the Indonesian revolution, to disarm the surrendered armies in the Netherlands East Indies financially until the Summer of 1946, so this job also remained to be done as best we could during the Japanese evacuation. It had to be dealt with simultaneously with all the research work talked about already, and we eventually raked in some eighty-six million guilders and a quantity of other booty, but we would probably have got five times as much if we could have tackled the job properly six months earlier.

#### CONCLUSIONS

(1) The type of investigations mentioned must necessarily involve analysis of enemy expenditure over a period of years and lies right outside the province of a Force Paymaster. He is a busy enough man on his own work and he has to advise the Commander and his staff on almost every conceivable matter under the sun when in another nation's territory, as well as to solve all financial problems or disputes between ourselves and our temporary hosts and to keep our cash services supplied and up to the mark. He has not normally had any training in Economics or Banking, and so has to rely on his common sense, whilst his staff of one Captain plus two N.C.O.'s is quite inadequate to take on all this additional work. The mere counting, and accounting for, a hundred millions of booty in currency—not to mention bullion and valuables—is work by itself for three times that number. The investigation of financial Fifth Columns is not his job, yet someone must do it.

(2) Once an enemy has surrendered, the cash in his possession is probably more dangerous to peace in the long run than his arms. It is not necessarily true that he can do no damage with that cash provided that his currency is declared worthless, because he has probably spent a lot of it already with an eye to getting in on the ground floor of trade and helping insurrections before that happens. Even in those countries it is worth while to investigate what he has been doing financially, but it is absolutely essential to do so in any country where the currency he has used continues to be generally accepted. He may have acquired businesses in the names of stooges or friends on whom he can put a half-Nelson owing to their having business interests in his own country.



(3) The quicker these investigations can be carried out the easier they are, and the less chance of any financial mayhem being successful.

(4) It is suggested that what is needed is for—

(a) Commanders and Staffs to realize that there is such a problem and that it is important. There is no necessity for them to have any particular knowledge of finance (though it is most useful if they have), but they should make sure that they have the necessary experts on their staff to deal with the technical side and also that the rest of their staffs co-operate fully with them.

(b) An adequate staff of properly trained Treasury men must be available to go in with the advance troops to take over Banks and hamstring the enemy's financial manoeuvres generally, and these must be given a sufficient escort to deal with any "rough house" that may be met with during the first vital few days. Their true position should be analogous to Civil Affairs, but not subordinate to the Chief Civil Affairs Officer, and their leader should have free and direct access to the Commander himself or to any member of his staff. They will require one or more interpreters pretty permanently allotted to them.

(5) If 4 (a) is to be achieved, a lecture on the nature of this problem should be included in the syllabus for the Imperial Defence College, the Senior Officers' School and the Staff College; whilst a short pamphlet describing the best methods of breaking the enemy's financial grip on a country might also be most useful.

(6) It was found that the Japanese would give far more reliable information to the British Forces, who they felt had defeated them, than to either the French or Dutch Governments. This attitude may well be taken up by any other defeated enemy, so it is not of much use for the soldiers to say "That sort of job should be done by the Government of the country." Usually that Government is struggling to reform itself with raw material to choose from, and in any event it would take them longer to dig out the true facts. Time is golden in such matters.

(7) Had the necessary trained staff been available we should not have the uneasy feeling today that there is up to 300 millions piastres in French Indo-China and nearly 1500 million guilders in Sumatra which may still be serving Japanese ends. These amounts are greater than the total pre-war currencies in circulation.

(8) It is easy to be wise after the event, but the wise man can learn from a past mistake and avoid the same error again, and it is hoped that this article may be of some help in preventing it if in the dim, and we hope distant, future we should ever find ourselves in a similar position again.



## THE PRICE OF POLITICS IN SUMATRA

By LIEUT.-COLONEL H. E. CROCKER, C.M.G., D.S.O.

**W**HEN on a lecturing tour with the Royal Air Force in the Far East I had occasion to visit Sumatra and stayed at the R.A.F. Mess at Padang, where the Squadron Leader kindly put me up in his room.

At that time the native forces, known as the "Indos," were particularly active against our troops, both British and Indian, and inflicted many casualties. The camp, where we had a garrison of some 160 men of the R.A.F. Regiment, was enclosed by a flimsy wire fence. Protection was dependent on Bren gun posts spaced at intervals, for there was not enough wire available to make any serious obstacle. The main approach to the camp from the road was guarded by a strong redoubt. Within the Mess we had a shelter of oil drums filled with gravel, in which we took refuge when things became too lively.

During the day we often visited Brigade Headquarters in the town about six miles distant from the air-strip. There was always a certain amount of excitement in travelling along this road. The Squadron Leader, who drove the jeep, sent it along at well over 50 m.p.h., and we had a couple of well-armed men looking over the back. It appeared that harmless looking "Indos" on the road had a playful habit of hurling a bomb into your car after you had passed them, while we were always liable to have bombs thrown at us as we passed through the villages. One village had gained an unenviable notoriety for its propensity of throwing bombs at passing cars and, on one occasion, had bombed a lorry in which the football team was travelling. Every man was more or less seriously wounded.

In spite of these attacks, we were not permitted to take any retaliatory measures, and were not allowed to destroy the villages where the bombs had been thrown. We were, it is true, allowed to fire in self-defence, but were prohibited from planting mines or booby traps in the houses or tracks used by the "Indos" in their attacks on our men.

One afternoon a man ran towards the jeep in which we were leading a convoy, waving his arms and shouting. As we slowed down, he leaped on the car and attacked the Squadron Leader, who put several bullets from his revolver into his body. In spite of this, the man ran round the jeep and slashed at the other passenger with a Malay *kris*, slicing off a long strip from his arm. Again revolver shots were fired into his body, and this time he fell off into the road. The Squadron Leader promptly ran over him, which finished the affair as far as he was concerned. He must have been doped.

The convoy meanwhile had halted and was heavily fired on by "Indos" concealed in the trees nearby, a trick they had learnt from the Japanese. The escort returned the fire and several of the enemy snipers dropped from their perches.

On another occasion the jeep about five minutes in rear of the car in which I was travelling was bombed at the same village, but the driver luckily escaped without injury. Later on orders were issued that cars must not travel singly.

Our treatment of the natives and measures for the protection of our own troops differed fundamentally from the methods employed by the Dutch. The latter took no chances and went on the principle of firing first, while villages were destroyed wholesale where any attack had been made on their men—the only thing the "Indos" understood.



At night it was usually fairly exciting in the camp. The "Indos" would creep up close to the wire fence and blaze away at random, trusting to luck to hit someone. Bullets whistled overhead and occasionally through the walls of the Mess hut, while our Brens returned the fire with enthusiasm, firing at the flashes of the Japanese rifles. Often after a burst of fire we would hear screams and groans—an old Japanese trick of trying to entice us out to look for bodies, when they would be waiting for us in ambush. We were too wise to be taken in by such a palpable trick, and we lay low until the morning armoured car patrol went out. We did not find any bodies while I was there but splashes of blood told the tale. We found the little paths where their snipers had approached the camp but, for political reasons, we were not allowed to plant mines therein. We were there to be shot at and had to take our chance.

The evening "hate" usually started about 11 o'clock, and we waited till about midnight before turning in. One night, after everything seemed all clear and we had turned in, we were heavily sniped in the early hours, and bullets from Tommy guns crashed through the walls of our room close overhead. Their snipers had improved in their shooting, thanks to Japanese training, but we just escaped and took refuge behind the oil drums.

The Japanese had handed over large quantities of arms and munitions to the "Indos," and a number of Japanese officers had remained to train them in sniping tactics. They adopted the Japanese methods of sniping from trees and constructing road blocks behind convoys to prevent their return.

We heard reports of an intended raid on the air-strip one evening and were attacked by several hundred "Indos" who tried to rush the camp. By that time we had been reinforced with Gurkhas and had, in addition, the men of the R.A.F. Regiment. Even so, some of the "Indos" managed to enter the blockhouse guarding the road, and caused several casualties before they were killed by the Gurkhas. They attacked under a heavy and well directed fire from their covering troops, but whether they were led on this occasion by Japanese officers it was impossible to say. All our Bren gun posts were attacked, but the attackers were driven off with heavy loss. Bullets streamed through all the huts of the camp and a few men were hit. If only we had been allowed to mine the approaches, we would have been more secure but, again, political considerations were paramount. Fortunately the "Indos" concentrated on an attack on the camp and disregarded the air-strip. They could have done immense damage with explosives and rendered the air-strip unserviceable for some time. It would have been a serious matter, as we were entirely dependent on air transport for all our supplies.

It was cheering news that all British and Indian troops were to be evacuated from Indonesia by the end of November, 1946. It had been a thankless job, rescuing Dutch and Chinese families from the "Indos" and being forced to submit to ceaseless attacks without retaliation.



## A HISTORIAN'S VIEW OF THE WAR

By ARTHUR BRYANT

On Wednesday, 22nd January, 1947

AIR CHIEF MARSHAL SIR ROBERT BROOKE-POPHAM, G.C.V.O.,  
K.C.B., C.M.G., D.S.O., A.F.C., in the Chair

THE CHAIRMAN, on introducing the Lecturer, said there must be few if any in the audience who had not read Mr. Arthur Bryant's books, especially *The Years of Endurance* and *The Years of Victory*. It was therefore unnecessary to emphasize how well he was qualified to talk on the subject of the lecture for this afternoon: qualified not merely by knowledge of history, but by understanding of the problems of the fighting man and sympathy with his outlook on life.

### LECTURE

I FEEL I owe you an apology for having the impertinence to speak to such an audience on such a subject. What I am going to do is to try to suggest how the war may look to a historian looking back at it in a hundred years time. The historian's job is a two-fold one. It is, first, to pick out of a great mass of facts the ones that really matter—to see the wood for the trees. And it is to deduce from the facts he does know the ones that he does not know. Like so many historians, I shall probably be wrong, but there is perhaps no harm in trying.

First of all, then, we find something which has happened a great many times before in human history and which, of course, may conceivably happen again. We find an attempt on the part of a minority of mankind, but a very determined and well-armed minority, to impose their will on the rest of the World, partly out of material reasons of greed and partly out of ideological reasons; out of, that is, a restless itch to make the whole World conform by force to a single uniform pattern of thought and behaviour.

In this case we find no less than three nations all forming the same ambition, and at some point or other starting to work together on a common axis. And the first stage of the War is one in which each of these three nations in its own part of the World tries to secure for itself adjoining areas containing strategic bases and vital raw materials before the rest of the World wakes up to a realization of what is happening and combines to stop it. We get Japan, in the Pacific, going in 1931 into Manchuria and then, five years later, trying to swallow China and, though not quite succeeding in that enormous ambition, gaining virtual control of the whole Chinese coastline down to the French Indo-China border, and so securing a potential backdoor into the vital area of South-East Asia and the South-West Pacific. In 1936, we get Italy—Italy, which already possessed one foothold on the far side of the Mediterranean in Libya—seizing another in Abyssinia and then, in the Spring of 1939, crossing the Adriatic into Albania to gain a backdoor into the Balkans. And finally, and this affected us in this country most closely—partly because she was geographically nearest to us and partly because she was our old enemy of the last war—we get Germany, in the Spring of 1936, remilitarizing her Rhineland frontier and, by doing so, barring the French Army from participation in the affairs of Central and Eastern Europe. Then, having completed her Western Wall, in the Spring of 1938, she seized Austria by the *Anschluss* and, by doing so, not merely outflanked but practically encircled the defences of the Czechoslovak Republic, against which she immediately moved that Autumn. There was a slight pause following the Munich Agreement and then, in March, 1939, when Hitler tore up that Agreement and



marched into Prague, the liquidation of Czechoslovakia by which, as one can see from the map, Germany gained a perfect position for doing precisely the same thing to Poland.

At that moment, however, something happened which had happened before in human history. The Government of this country gave a guarantee to the two countries which barred Germany's further advance eastwards—Poland and Roumania—that if Germany attempted to strike at their western frontiers, Britain, if called upon to do so, would fight by their side and, by implication, too, her ally, France. In other words, Britain issued a kind of challenge to Hitler which said: "Thus far and no farther! If, by attacking Poland or Roumania, you proceed with your declared intention—declared in *Mein Kampf*—of marching against Russia, to found in the Ukraine and Western Russia a Greater Germany"—amounting to two hundred millions by the end of the century, as Hitler predicted in that work—"you will have to do what you said in *Mein Kampf* you never would do: you will have to fight a war again on two fronts."

On the face of it, of course, it was a somewhat illogical moment for such a challenge. It was rather late. The logical moment, if the challenge was to be made, would presumably have been the Spring of 1936, when Germany remilitarized her Rhineland frontier. Once she had done that, Germany's Western Wall and the whole length and might of the Reich lay between the French Army and Poland. We were strong only at sea, and even in the last war we had been unable to operate warships, except for a very few submarines, in the closed waters of the Baltic, and in this war, with the air weapon, that was out of the question. Poland only touched the sea at Gdynia, in the Baltic. What is more, it was very doubtful whether we even possessed the strength to defend ourselves. For the past twenty years we had consistently disarmed, partly out of a very sincere but, as we can see now, extremely mistaken belief that by setting the example and disarming ourselves we would cause other peoples, less civilized than ourselves, to do the same; and partly out of a perhaps even more mistaken belief (if any belief could be more mistaken) that what was physically possible could not be made financially possible. Whatever the reason, disarmed we were.

Yet it did not stop us issuing the challenge, once we had made up our minds to what we did not want to make up our minds to, that Germany was not just out to redress the grievances, real or alleged, of the Versailles Treaties, but was out to dominate Europe and the World by force. Once we had decided that, then the challenge was implicit in our whole history. Our history, if I might try to put it in a nutshell, is the history of a people who for centuries have inhabited an island—an island which they had the wisdom to make an island not only geographically but strategically by encompassing it with a strong fleet. As a result they have been free from the necessity for that rigid centralization, that quick rapid authority of one man or a few men—which it is so difficult to avoid, as we have learned from our experience in the last two wars, if one lives in constant danger of invasion—and have been able to develop instead exactly the opposite principle: a form of government based on the right of every man to criticize and oppose and even to obstruct, by lawful means, the government. In other words, we have evolved and developed the idea of government by agreement only after full discussion and, what inevitably goes with discussion, controversy; a form of government, of course, often slow and inefficient in the short run but immensely efficient in the long run, because, by delegating responsibility, it tends to train men for it.



As a result of this, we have come, through long experience, to form a certain habit of mind. Perhaps the nature of that habit of mind can best be illustrated by a story—a true story which I am afraid involves a slight impropriety of language for which I hope you will pardon me, especially as I first heard the story told on a public platform by no less a person than Lord Halifax. The occasion was the General Strike. The scene was the outside of the dock gates in London with lorries emerging, laden with food, manned by soldiers with fixed bayonets and steel helmets, or else with great printed notices on them: "Acting on the authority of the T.U.C." or "the P.L.A." There then emerged a vegetable cart, drawn by a donkey and driven by an elderly gentleman in a very dented bowler hat and smoking his pipe. Scrawled on a piece of cardboard behind his head was the following superscription: "Acting on the authority of my own bloody self"!

Although he does not always have the opportunity of doing so, that is the authority that your Englishman instinctively likes to act under, and not only likes himself to act under himself, but, however slowly and grudgingly at times, likes to see other people doing the same. For he has learned from long experience that, if this is not allowed, trouble sooner or later ensues. That conception and the conception of gentlemen like Louis XIV, or Philip of Spain, or Napoleon Bonaparte, or, in our own time, the late Kaiser Wilhelm and the even more late Adolf Hitler, are bound, in the end, to clash. And they clashed in the Autumn of 1939.

One further point. We had issued in the past, under similar circumstances and under equally discouraging conditions, similar challenges, and in the fullness of time and after bitter suffering and vicissitudes had made those challenges good. However, as we all know to our cost, Hitler decided to ignore our challenge, and in ignoring it, to ignore history. No doubt he reckoned that he had very good military reasons for doing so. So in the Autumn of 1939 he marched his armies into Poland.

At first, everything went as he said it was going to go. He liquidated in two or three weeks the gallant resistance of the outnumbered Polish Army, though not the ultimate resistance of the Polish people. He then (with his non-aggression pact with Soviet Russia in his pocket—a kind of deferred Munich Agreement in the East) completed his preparations for striking in the West while the French and what British Army there was, looked at his Western Wall. They were not equipped or armed or trained to do anything else.

Then, in the Spring of 1940, he struck. First, as you will remember, in April, by a treacherous but daring coup he seized almost in a night the western coast of Denmark and Norway, and, by doing so, extended and flung back our sea blockade. If you think in terms of what we should now call the last war but one, the 1914-18 war, the strategy of that war was dictated by the fact that the French, the British and ultimately the American armies held a solid line 400 miles long for four years from the Swiss frontier to Nieuport on the North Sea coast. Because of this the Royal Navy held both sides of the Straits of Dover, which it was able to shut like a gate on anything coming from the North-East. As a result all that the Navy had to do, apart from dealing with the submarine menace, was to keep closed the comparatively narrow waters between the Norwegian coast and our base in the Orkneys. In consequence everything outside this little box of sea—the North Sea—was closed to Germany's ships and those of her allies, but open to our own ships and those of our own allies. Now in April, 1940, by the seizure of Denmark and Norway, that blockade was extended and flung back on Iceland and the Denmark Strait.



Far worse followed. In the beginning of May Hitler struck on land in the West. He poured his armies into Belgium, and Holland, and France through the Sedan Gap, and drove westwards with terrific speed and concentration, until there came that terrible day when what so very nearly happened in 1914, and what so very nearly happened again in the Spring and early Summer of 1918—but never did happen—happened. Amiens and Abbeville fell in a single afternoon, and we learned to our dismay that the German army was on the Channel coast and that our own army was cut off from the main French forces and surrounded, with no apparent alternative but either annihilation or surrender.

Then came the miracle of Dunkirk. By the grace of God and the work of the Royal Navy and Royal Air Force and the constancy of that Army itself, our Army came back to us, but minus its entire equipment. A few weeks later France fell, and there we were, utterly alone, with the whole coastline of Western Europe in a great hoop of ocean from the North Cape to the Spanish frontier in the hands of our terrible enemies, and, with the vital sea lanes, on which we then depended for two out of every three mouthfuls of food and for nearly all the raw materials we needed for waging war, fatally outflanked by sea and air.

Even that was not the full worst. I said earlier that, when Hitler marched into Poland in September, 1939, he no doubt reckoned he had a very good military reason for ignoring our challenge and with it history. I can best illustrate the nature of that reason by an incident that happened during the Munich crisis, on a night when war seemed absolutely certain, and when a small Cockney newsboy was heard calling out the news in a gloomy, deserted London street. As he sold his papers he kept shouting cheerily: "Night Special! Night Special! 'Orrible News: Hitler Swims the Channel!" I have always felt that that ignorant boy was expressing the authentic voice of England—all the assurance and, if you like, all the complacency which had come from generations of being secure from any danger of sea invasion. He was saying, in his uneducated way, what that great First Lord—Lord St. Vincent—had said, 140 years before, when Napoleon's "Grande Armée" was waiting on the other side of the Straits of Dover and when the whole of England was drilling feverishly to make up for lost time in the equivalent of the Home Guard, grumbling (this is literally true) some of them, at the pikes which the Government had had to serve out to them in lieu of more up-to-date arms. For when nervous people used to ask Lord St. Vincent whether he thought the French would come, the old seaman was in the habit of replying: "Come? Come? I do not say they will not come. I only say they will not come by water." But Hitler no doubt had reckoned that a great deal had happened in the past 140 years and that when his "invincible *Luftwaffe*" had got control of the airfields of France, Belgium and Holland, he would be able to put such a weight of aircraft over the waters of the Channel and North Sea that no British man-of-war would be able to float in those waters. And after that, of course, the Panzers could have come into England in Rhineland barges or in anything that floated.

Yet they did not come. They did not come because the Battle of Britain happened to go the other way. And in that sense I always suggest that the Battle of Britain—a battle which I suppose decided more things than any other single battle in human history—decided first and foremost what battles of a very different kind had decided in the past—that at a moment when all Europe was at the seeming mercy of an omnipotent army and when England, through her own past folly and neglect, was almost unarmed on land, we should remain an island, an island fortress and a beacon of hope to the whole World. If you doubt the truth of that, ask



yourself one very simple question: what would have happened in October, 1940, after we had won the Battle of Britain, if, through some unfortunate convulsion of Nature, the waters of the English Channel had dried up?

Because of the Battle of Britain the Royal Navy was enabled to fulfil, what it could not otherwise have fulfilled, in narrow waters, its age-long task of keeping the narrow seas around us a moat. I think, perhaps, that at this moment I ought to mention—for it is so seldom mentioned—the work that Bomber Command did at that time in bombing the invasion ports and barges on the other side of the Channel—as essential an exercise of defensive sea power as the work of the Navy, albeit with a new weapon.

Hitler was thwarted—thwarted as Napoleon had been before him, by twenty miles of salt water. What did he do? He did exactly what Napoleon had done in the same position. He said: "Very well, I cannot cross this absurd ditch and knock out these stupid, stubborn, unarmed islanders. But the World is round. I can turn my invincible armies round the other way. I can break out of this tiny Europe I have dominated, eastwards across the Mediterranean into the Levant and North Africa, and can present the islanders and their unarmed sympathisers in the United States with a solid Axis *bloc* from the Atlantic to the Pacific and from the North Cape to the Cape of Good Hope. And what will they do then?"

#### SEA POWER

At that moment there seemed singularly little to stop him from doing so. Yet, as we know, he did not do so. He did not do so because we were able to use the one instrument we had had the wisdom (perhaps "instinctive" wisdom would be the better word) to keep unrusty in our hand—the instrument of sea power. For with this we were able to put a ring of salt water and desert round Europe to North and West and South, and so keep Hitler bottled up as in a cage in the Europe he had conquered until the reviving forces of liberation from East and West were strong enough and ready to enter that cage and throttle him.

Many people before this war—one of them was Hitler—had thought that the coming of the air weapon meant the end of sea power. But they were wrong. It was very fortunate for ourselves and for the cause of human liberty that they were wrong. I do not suppose that in any war in history sea power has mattered more than in the last.

What is sea power? The classic definition, as you know better than I, is "the ability to deny to your enemy the use of the sea's surface for transporting his supplies and arms whilst enjoying it for your own and those of your allies". About three-quarters of the world's surface is salt water, and in a global war in which both sides are resolute and more or less evenly matched—a war, in other words, that continues—command of the sea becomes an ever-increasing factor. It becomes in the end the determining factor in global war. And that remains true whether the weapons with which one fights for sea power happen to be surface warships, as in the wars of the past; or surface warships and aircraft acting in conjunction, as in the late war; or even, as might conceivably happen in the future, aircraft operating alone, or not even aircraft but land-based rocket-propelled devices or some other kind of weapons. Who can say? But what remains the vital factor is the command of the sea's surface. That will continue to be true until the day comes, if it ever does come, when armies and their supplies—which, incidentally, get heavier with every year of scientific advance—can cross the sea not by using the sea's surface but by using the air over the sea.



How do we exercise sea power? The answer in the past was by the Royal Navy supported by an Army which, at first hopelessly outnumbered and hopelessly ill-equipped, had to hold and, if necessary, capture the bases needed for the exercise of sea power. In the late war, sea power was exercised by the Royal Navy and the Royal Air Force acting in conjunction, again supported by an Army fulfilling exactly the same indispensable function. Sea power, in other words, as exercised by Britain, is the business equally of all three Services. No one of those Services acting by itself can exercise sea power.

Now it is comparatively easy to see how in such moments as 1940 (and there have been several in our history) we have been able to put that barrier of sea power round Europe to the West. There we are (as Hitler, while he was still with us, used to put it) anchored like an aircraft-carrier off the western shores of Europe, and from sea and air bases in this country it was possible, even in the worst days of 1940 and 1941 (though at times it was desperately hard) to bar egress to anything from Europe to the West. But it is not very much use shutting the front door of a cage in which you have shut up an aggressor if you leave the back door open, and Europe has a back door to the sea—two thousand miles of it, in the Mediterranean—that curious extension of the Atlantic which practically cuts in half the great land spaces of Africa, Europe and Western Asia. And one cannot, of course, command the Mediterranean from bases in this island; one can command it only from bases in the Mediterranean itself. As you know, much of the history of our country and, in particular, of the Royal Navy, has turned on the control, at such vital moments as 1940, of Mediterranean bases. The greatest name in our naval history is closely associated with that story. You remember how, in 1797—that year curiously similar to 1940—this country found itself utterly alone, fighting a great revolutionary, military Power which had over-run all the countries allied to us and turned all Europe, including the fleets of our former allies, against us—fleets that then outnumbered our own by nearly two to one. And how, faced by invasion, we had been forced to recall our fleet from the Mediterranean to defend our own shores and how two great sea-victories—Camperdown and St. Vincent (in their effects not unlike the Battle of Britain)—saved us from invasion. And how the young General of genius whom the French Revolution had thrown up, who had been appointed to command the Army of England which was to lay us low, decided, like Hitler after him, that it was too risky to trust that army and his own career to the English Channel while our naval forces were still in being. And how he had thereupon built up in the utmost secrecy a great armada in the ports of Southern France and Italy and, taking advantage of our fleet's absence, had crossed the Mediterranean, seized Malta from the Knights of St. John and landed at Alexandria, thence marching on Cairo and intending to march to Constantinople and from there, like Alexander before him, across the deserts of the Middle East to India to found a great Continental Empire on the ruins of England's amorphous empire of trade and usury. And how, at the very moment Napoleon crossed the Mediterranean, the British Government, taking its courage in both hands, had sent back into that sea twelve ships of the line under a young Rear-Admiral named Horatio Nelson, who had found the French battle-fleet at anchor under the guns of Aboukir Bay and in one terrible night of battle had utterly annihilated them.

From that moment the whole strategy of that war changed. The great forces of the outer world (in those days Russia and Austria) taking courage from our victory, re-entered the fight. Napoleon and his army were virtually prisoners in Egypt, from which Napoleon alone ultimately escaped, while the great forces of



the French Revolution in Europe, though still immense, were, as we can see looking back now, so long as that ring of British sea and Russian land—sometimes active and sometimes passive—was round Europe, shut up inside Europe. Though it took many years to reduce them and ultimately to destroy them, their doom was from that moment certain.

But Hitler was in a much better position to break out across the Mediterranean than Napoleon had ever been. He had an ally, Italy—Italy, which cut the Mediterranean in half; Italy, at any rate on paper, a great naval Power with a fleet nearly twice as strong as our own Eastern Mediterranean Fleet; Italy, moreover, which already possessed, on the far side of the Mediterranean, Libya and Abyssinia, with half-a-million troops there. It had had, as it were, a foot in a half-open door. But, so long as France was in the War, Italy's power to let Germany out of Europe across the Eastern Mediterranean was neutralized—neutralized by the presence of powerful French armies in Libya, Tunisia and Syria, and by the great French naval base of Bizerta and the French Mediterranean Fleet.

But once France was knocked out, all those advantages were lost to us. We found ourselves in an apparently impossible position: our three main naval bases in the Mediterranean—Gibraltar, Malta and Alexandria, hopelessly cut off from one another; Malta, within 50 or 60 miles of the Italian coast, apparently untenable in the face of air power; and such military forces as we possessed in the Nile Valley, some 50,000 Imperial troops under General Wavell in Egypt and the Sudan, surrounded or practically surrounded by half-a-million Italian troops in Libya to the West and in Abyssinia to the South-East. All those half-million Italian troops had to do was to push General Wavell and his 50,000 out of Egypt, advance up the Palestine coast as far as Haifa, and we should have been left without any naval base of any kind in the Eastern Mediterranean. In that case the Mediterranean Fleet would have had to go: either it would have had to go while the going was good through the Canal and home via the Cape, or it would have had to fight its way out through the Sicilian Narrows at whatever cost. But whatever it did, it would have had to go. Once it had gone it is difficult to see what could have prevented the Eastern Mediterranean from becoming an Axis lake. The Italian Fleet would have been free to ferry into the Middle East any number, not merely of Italians, but of Germans. Though, no doubt, we would have fought a hard rearguard action to defend our Middle East bases, it is difficult to see, with the forces which Germany could then have deployed, what could have prevented the oil wells of the Middle East from passing into German hands. Turkey would have been surrounded, with no apparent alternative but either to accept the humiliating lot of Hungary and become a voluntary German corridor or to suffer the terrible fate of Poland and become an involuntary one. In such an event the German Army, using Turkey and Asia Minor as a passage, could have appeared on the Russo-Turkish frontier within striking distance of the vital oil wells on which Russia's whole ability to wage war depended, even before Germany struck at Russia from the West. I always suspect, rightly or wrongly, that that was the intended programme of the German attack on Russia. It is a question whether Russia, in such apparently hopeless circumstances, would have chosen to resist. It is difficult to see what she could have done in such case had she resisted, or what, in our then state of arms, could have prevented Germany from linking hands across Southern Asia with her ally in the Pacific. We would have been faced with a solid Axis *bloc* from the Atlantic to the Pacific and very probably from the North Cape to the Cape of Good Hope.



Three things prevented it. First, that astonishing decision of Mr. Churchill and the War Cabinet and the late Field-Marshal Sir John Dill, to send out of England, after we had lost our entire modern equipment at Dunkirk, before the Battle of Britain had been fought or, at any rate, finished, and while we were still expecting an invasion, a large part of the little armour we then possessed. In the whole history of war I can think of no braver or wiser decision. Secondly, the achievement, equally astonishing, of General Wavell and his little desert force in liquidating two great Italian armies, many times the size of his own, first in Libya and then in Abyssinia, with almost nothing—campaigns which, I imagine, will be studied as long as the history of war. Thirdly, and equally remarkable, the performance of the Eastern Mediterranean Fleet, under one of the great line of British seamen—Andrew Cunningham—in holding the Eastern Mediterranean, at times without a single capital ship in commission, against both the Italian fleet and the *Luftwaffe*. And in this, it must be remembered, the force at the other end of the Mediterranean under Admiral Somerville played a great part. So did that handful of boys of the Fleet Air Arm who, in their old, slow, steady Swordfish, went in under the guns of Taranto on one memorable night in November, 1940 and immobilized the Italian battle-fleet.

#### HITLER THWARTED.

The result of all these things was that by the Spring of 1941 Hitler was again thwarted. He had failed to cross the Channel; he had failed, like Napoleon, to break out across the Eastern Mediterranean. What did he do? At that moment, as you will remember, he decided to take a hand in the game himself. He poured his armies into the Balkans; he over-ran Yugoslavia; he liquidated the resistance of the gallant little Greek army in Albania; he drove out of Greece our own small expeditionary force—all we had to send from our desperately strained and depleted forces in the Middle East. He did even more: he brought off an airborne invasion of Crete which he was able to do because, holding airfields in Southern Greece, his fighters could afford, in the then range of fighters, effective cover over the Cretan skies for his bombers and troop-carrying planes, while our own fighters, 200 miles or more away in Egypt, were unable, in the then range of fighters, to afford effective cover. But though Hitler conquered Crete by airborne invasion, he was unable to take the next and final step across the Eastern Mediterranean by air alone. He could not, because, to do so, he would have had to send his bombers and troop-carriers (which, incidentally, had taken heavy losses in the fighting over Crete) out of the reach of his own fighters and into the reach of ours. And that would have been the Battle of Britain over again. And he could not go by sea because, in spite of its losses, the Eastern Mediterranean Fleet—more, perhaps, by bluff and courage than anything else—was still in being. He tried to get stepping-stones by Quisling action in French Syria and by a rising in Iraq. But we were just strong enough and just in time—only just—to nip those attempts in the bud. And, as a result, by the Summer of 1941 Hitler was faced by a most tremendous decision—a decision on which the whole War turned.

He had three choices. Having failed to cross the Mediterranean he could do what Napoleon did—he could try to go round it, either by going, like Napoleon himself, through Spain into French North-West Africa and so dominating our already dangerously-harassed sea lanes and communications with the Middle East. Or he could go, more directly, round the other side of the Mediterranean through Turkey and so into Asia Minor. Turkey, however, remained true to her alliance with Britain and refused to give Germany voluntary permission to go through her territory.



And I can only suppose that the daring offensive nature of our strategy that Winter in the Middle East had deceived the Germans—and I imagine it was intended to deceive them—into believing that we were stronger in that part of the world than we actually were. We had concealed our weakness by a display of strength—a very difficult thing to do at such times but the right thing. And I suppose that the thought of a British-Turkish army holding up the German advance in the difficult hill country of Anatolia, while a neutral and inscrutable Russia sat on Germany's Balkan flank, caused our all-powerful foes to hesitate. That may have been the reason, or it may not; it is mere conjecture. At any rate, they did not take that alternative. The next alternative was to replace the Italian armour that had failed in North Africa by German—a process which had already begun by the arrival of Rommel and his Afrika Corps—with the idea of doing in the Autumn of 1941 or Summer of 1942 what the Italians had so unaccountably failed to do in the previous Winter. But there was a difficulty. The difficulty was Malta. Malta, by a miracle, was still holding out, and from Malta our aircraft and submarines were taking a heavy nightly toll of all German and Italian traffic across the Central Mediterranean. As you know better than I, it takes a considerable time to build up an army for major offensive operations in a desert, even in the most favourable supply conditions.

Moreover, Hitler could no longer have felt wholly confident that time was altogether on his side. Not only was Britain beginning at last to get into her war stride and to build up quite a respectable force even in the Middle East; not only was the great offensive weapon which we had been preparing since before the War—the weapon of Bomber Command—beginning to show the first signs of its future terrifying power; but America, alarmed by the events of 1940, was starting to arm. And Hitler was a dictator and Hitler was a German, and neither Germans nor dictators have ever been very notable for the virtue of patience. He therefore took the third choice, the choice that Napoleon also ultimately took. Barred by the ring of British sea power to North, West and South, he struck eastwards out of Europe, the only way left to him, across the great territorial spaces of Russia. And no one, not even Napoleon, had ever yet done that with success.

But Hitler thought that he could do it. On 22nd June, 1941, he announced that the greatest march in history had begun. It ended, as we know, in May, 1945. Yet in the terrible Summer and Autumn of 1941 it looked as though it might end in a very different way from the way in which it did end, though mercifully for the peace of mind of most of us the size of our maps tended to obscure the real facts at the time. The German rate of advance in that terrible Autumn was at times even more rapid than it had been in France in the previous Summer. The Germans drove into Russia to a depth of 500 miles on a 1,200 miles front. They encircled Leningrad. They all but encircled Moscow. They over-ran the most important industrial and agricultural areas of the Soviet Union. They inflicted the most appalling losses, in the neighbourhood of several million men, on the Russian armies. But they did not break the will of the Russian leaders to resist or of the Russian armies to go on fighting.

Three things saved Russia, and with her the World. First, the superb tenacity of the Russian soldier fighting in defence of his native soil and of his great social experiment. Second, the fact that the Russian leaders, exactly like our own leaders in 1940, in the hour of their country's adversity fell back on her historic policy. They yielded that of which they had so much, namely space, to gain that most valuable of all elements in war, time. They paid, of course, a terrible price for it



in loss and human suffering. Yet they were right to pay it, and, by doing so, they won the assistance of their traditional ally, the Russian Winter, which fell with all its terrible intensity on the German field armies at the end of November, 1941.

I do not think—though history may prove me utterly wrong in this—that it was wholly an accident that some ten days after it became clear that the Germans were not going to do what they boasted they had already done—break the Russians before the Winter—the third Axis partner, Japan, struck in the Pacific. Germany and Italy having failed to break the ring of British sea and Russian land power from the inside, the third Axis partner attempted to break it from the outside. You may say—and no doubt history will say with you: "Why, in that case, did not Japan strike before? Why did she not strike in our rear when we were so desperately pressed at sea in 1940, or in the Spring of 1941?" But I think now one can see the answer. I think the answer was this; that neither Japan nor Germany wanted America to enter the War until Britain or Russia or both had been knocked out. And looking back at everything that happened between America's entry into the War, with Britain and Russia still fighting, and the triumphant end of that War, one can begin to see the reasons for that fatal hesitation. And, after all, when Japan struck, she took very great care to see that the time between America's nominal entry into the War and the hour when she should be armed and equipped and trained for major war, should be as prolonged as possible. At that time America, like ourselves in 1939, was strong only at sea. Half her entire battlefleet—the whole of her Pacific Fleet, was lying on that fatal morning in Pearl Harbour, and every one of those battleships was sunk, though as we now know, only one permanently. And when, a few days later, our own two battleships—all we could spare out of our desperately-depleted capital naval resources (down at that time to about ten units in the entire World), were sunk for lack of air cover off the Malayan coast, command of the sea in the South-West Pacific passed for the moment absolutely and completely to Japan. We then suffered a terrible object-lesson in the meaning of sea power and the strategic nature of our own Empire. We saw the American Philippines, the Dutch and British East Indies—with the hapless peoples who looked to us for protection, the islands to the North of Australia, French Indo-China, Siam, Burma with its vital road to heroic, hard-pressed China, and Malaya with the great naval base of Singapore—all pass within a few months, almost weeks, into the cruel hands of Japan. It was exactly like seeing a string of pearls fall to the ground after the string (which was sea power) had been cut.

#### THE DECISIVE YEAR—1942

Think now of the year 1942—the decisive year of the War—in the light of those events. A fully-mobilized Germany, Italy and Japan going all out to knock out Britain or Russia or both—and both had taken terrible losses—before America was armed and trained for major war. Four great offensives, full success in any one of which would have given Hitler his prior objectives, were being waged that Summer. First, one on every sea, but most of all in the Atlantic, against the vital sea lanes which alone kept the scattered forces of the United Nations in being and enabled them to achieve their wonderful and ever-growing feats in the way of supply: against the great conveyor-belt across the Atlantic from the rising war-factories and farms of America and Canada to the advanced base in these islands; from these islands and America to the fifteen or sixteen different fronts, active and passive, which we had to keep in different parts of the World, to keep the ring of British and American sea power and Russian land power round the Axis in the



West, and the great semi-circle of American and British sea power round the Axis partner in the Pacific, and so prevent them from linking-up. And also, against those vital sea lanes round the perilous waters of the North Cape to Murmansk, and round the Cape of Good Hope to the Persian Gulf, which alone enabled American and British industry to bridge the vital gap between the war production Russia had lost through the German advance in the West and the coming into full production of her new war-factories in the Urals. Secondly, in the South-West Pacific and Indian Oceans. By the beginning of May there seemed to be nothing to prevent the Japanese, in control now of Singapore and the Sumatra Straits, either in conjunction with an invasion of India from Burma or by by-passing India altogether, from striking with a great amphibious force westwards across the Indian Ocean to seize Ceylon and Madagascar and possibly the entrance to the Red Sea, and so to cut our vital communications with the Middle East. Simultaneously in Europe, during that Summer, two great German drives took place to break the ring from the inside, by far the greater of the two against Russia, this time confined to the southern half of the Russian Front, driving from the Dnieper to the Donetz, Don and Volga, to Voronesh and Stalingrad, to cut the oil communications of the Russian armies of the North and Centre from the Caucasus and then, swinging down into the Caucasus, to seize the oil wells of Baku. Simultaneously, Rommel driving out of the Western Desert was to drive the British out of Egypt and Britain's fleet from the Eastern Mediterranean, and to link-up with the main German forces in the North and possibly with the Japanese coming from across the Indian Ocean.

All those four great drives looked within an ace of succeeding. All were held. Thanks to the greatness of our Royal Navy and the magnificent work of the British and American sea and air forces, the constancy of the merchant fleets of the United Nations, and the great American shipbuilding programme, our sea lanes just—only just, in that terrible year—held. In the South-West Pacific and Indian Oceans the Japanese drive westwards never materialized. It was no doubt delayed by General Alexander's masterly extrication of his army from Burma, by a great victory which the Royal Air Force won that April over Ceylon, and by the timely seizure by the United Nations forces of Madagascar. But these, by themselves, could scarcely have done more than delay the immense power of Japan if it had been thrown westwards. What appears (I say only "appears") to have been the delaying factor was the rapidity of the American naval recovery after Pearl Harbour. It was more rapid, it seemed, than the Japanese conceived possible. And in the presence, at the beginning of May, of American task forces, still outnumbered but powerful, in the South-West and Central Pacific, the Japanese Admirals, rightly or wrongly, apparently saw the beginning of the threat that was the ultimate cause of Japan's downfall—that great American counter-attack from the East on Japan's long, exposed sea communications between the Japanese homeland and the immense area which she had conquered in the South-West Pacific. The Japanese Admirals turned aside to liquidate those task-forces and to deal once and for all with that threat by seizing all the islands beyond Australia and probably New Zealand, so cutting Australia off from the United States and liquidating the American task forces. In two great naval battles, the two greatest of the War—Coral Sea, fought at the beginning of May, and Midway, at the beginning of June—the Japanese "caught a tartar". They were naval battles of a new kind. They were not fought with the guns of battleships firing from ten or fifteen miles away. They were fought by the weapons of those new capital ships—fleet carriers, using their weapons at a range of two or three hundred miles. In the second of these great



battles the Japanese lost, I think I am right in saying, four fleet carriers, and in spite of their immense strength in the Pacific, from that day they virtually never moved forward. And in Europe and Africa the attack on the ring from the inside was held. The Russians were again driven back for hundreds of miles, suffering terrible losses, but they turned and fought at Voronesh and at Stalingrad—one of the supreme defensive battles in human history—and held. In North Africa our own desert army, fighting at the end of its immense sea and desert supply line, was defeated by Rommel at Knightsbridge, lost Tobruk, was flung back to the very confines of the Nile Valley. Then the Desert Air Force put up its magnificent covering action and at the first battle of Alamein Auchinleck and the 8th Army turned and fought in that spiritual home of the British Army—the last ditch—and held. When Rommel brought up his reinforcements and supplies (under great difficulties, thanks to Malta) and struck again at the beginning of September, under new leaders—Alexander and Montgomery—the 8th Army held again.

And then the counter-attack began. The Axis was extended to the full extent of its lunge. During that fateful Summer the United Nations had built up and kept in reserve just sufficient strength to take advantage of that moment, and to strike back. At the end of October Montgomery struck at the third battle of Alamein. A few days later the American and British forces landed in French North-West Africa, and, as Eisenhower drove from the West and Alexander and Montgomery from the East, the ring of sea power began to tighten round the Axis from the South. In November the Russians struck back in the great "sack" at Stalingrad and inflicted the first major reverse on the German field armies. At the same time the mounting weight of Bomber Command's offensive, now beginning to be supported by the first American day bombers, began to strike ever more heavily at Germany's industrial potential and communications.

From that moment, as we all know, the United Nations never let go the initiative—the initiative which we never enjoy at the beginning of any of our wars, partly because we have to fight from the outside of an immense and at first imperfect sea circumference an enemy with the initial advantage of interior lines and quick communications, and partly because we are never prepared for war, while our enemies are. I always suggest that a fight between a side with the initiative and a side without is rather like a fight between two men in a small room, one with his boots on and the other with his boots off. The fellow with his boots off has only two choices—to give in or to go on fighting with bleeding feet in the hope that sooner or later something will cause his adversary to pause for breath and give him a chance to get his boots on. Those chances were given us and the Free World by the Battle of Britain, including, I might add, the constancy of our civilian population under the Blitz, by the successful defence of the Eastern Mediterranean and Nile Valley; by the great Russian holding actions in Eastern Europe; by the Battle of the Atlantic; and by the American naval victories at Coral Sea and Midway.

#### THE FINAL STAGE

I shall only deal very briefly with the final stage in the War—the stage that is still fresh in our memories. In that last stage we and our Allies were attacking, as at the end of all the great wars of modern history, from the outside of an immense sea circumference an adversary with the advantage of interior lines and quick communications and with the advantage, too, of everything that ran on wheels in a continental fortress. In spite of those advantages it has always been ourselves and our Allies, fighting from the outside of that sea circumference, who have won



—won when, and only when, one prior condition has been fulfilled: absolute and complete command of the sea and of what goes with it in modern war—the air over the sea. Once that annihilating sea command has been won, won as it was won against Napoleon by Nelson's victory at Trafalgar, won as it was won by the sea and air forces of the United Nations over the submarine and the *Luftwaffe* in 1943 and the Spring of 1944, the enemy loses his advantage of interior lines. Such is the mobility and power of surprise given by command of the sea that, instead of being free to concentrate his forces, he is compelled to keep them strung out round an immense sea circumference of ocean of thousands of miles, and even when the first blow has fallen—in Sicily and Italy in 1943, and even after the major blow has fallen on the D-Day beaches in 1944, because he is unable to discover whether, when and where other attacks from the sea may fall, he is still forced to keep large numbers of men uselessly deployed defending his vast coastal circumference against both land and air attack. For this consequence of absolute command of and over the encircling sea applies to air attack as well as to land invasion. Both are examples of the offensive exercise of sea power from the outside of a sea circumference. And in the end we are presented with the ironical spectacle of a German army—one of many strung out and immobilized for many months at various points along the sea-coast—laying down its arms (of all places in the World) at Dunkirk.

In the wars of the past this attack from the outside of the sea circumference always took a very long time. It took a long time because, owing to the enemy's initial advantage of owning everything that ran on wheels on the Continent, we had always had to launch it at some very remote spot where his communications were most difficult and strained—in the mountainous peninsula of Spain and Portugal in the wars against Napoleon, for instance; in the mountainous toe of Italy in 1943, when we could not have safely struck on land at any other point. For that reason it has always previously taken a long time to nibble our way from that far point to his heart: in the war against Napoleon it took six years from the time of our first landing in the Peninsula. Any attempts to short-circuit the process by landing nearer his heart always failed in the past. They failed three times against Napoleonic France because the enemy was able on each occasion to strike back from that nearby heart with immense strength and push us back into the sea before we could make good our foothold.

But in 1944 we did make good our foothold and by doing so cut many years off the length of the War. We were able to do so for many reasons: by virtue of the greatest naval operation in history; by virtue of such wonderful feats of supply and technical achievement as "Mulberry"; by virtue of the superb training of our own and the American armies to fight a veteran enemy on his own soil, to dig in and to hold and to break out of the bridgehead. But I doubt whether even these achievements would by themselves have been sufficient to enable us to maintain and break out of our bridgehead had it not been for the use of a new weapon—a new weapon which Hitler's own moral obliquity had put into our hands, the terrible weapon of air bombardment of industrial centres and communications. Those ceaseless battles over the Rhine, Ruhr and Berlin, beginning even in the days of our utter weakness in 1940, and steadily and inexorably mounting in strength—battles attended by greater comparative losses than in any sustained victorious operation in human history—were imperceptibly driving the heart of German war industry eastwards, away from the West and the D-Day beaches.

When the Germans blitzed us in the Winter of 1940-41 it did not vitally matter, because, thanks to our command of the sea, they could not follow up their attack



in person and we were not having to fight a major war on land and supply our armies for it. The delay caused to the flow of our war production was not therefore vital. But when, two, three and four years later, we and our American Allies visited on Germany an infinitely greater weight of air bombardment, the Germans were having to fight and supply a major war on land—in the East, in the South and, after D-Day, in the West too. It was that combination of the ceaseless hammering from the air of the enemy's supplies and supply-lines with the ceaseless attacks of three great armies on land which finally broke the will and power of the German Army to go on fighting and released the full and terrible weight of the United Nations against their doomed ally in the Pacific.

One last point. In the last resort it is not weapons, it is men, who decide wars. We all know, looking back, that if the British and American Armies had not been trained to fight and defeat a veteran German Army in Western Europe and to do so in an incredibly short space of time, there would probably have been no London standing to-day, and no southern ports.

#### DISCUSSION

CAPTAIN E. ALTHAM, R.N. : I want to take the opportunity to ask such a distinguished lecturer and historian a question which, I cannot help thinking, must be very much in our minds and to which my attention was particularly called by a recently-published lecture by the new Chichele Professor of the History of War at Oxford: how are we going to enlighten the new generation about war—the history of war, and, more particularly, how to avoid war? Most of us here have been brought up to think of war, to study war and to train for war; but the vast mass of our fellow-countrymen do not regard it as part of their ordinary education. Am I not right in thinking that the scholastic profession as a whole are rather shy of the whole subject, and that the average child, certainly in the elementary schools, and perhaps even in the public schools, is not taught very much about the results of wars, how wars have come about, and how they have been fought and won or lost? The result is that our country has had two disastrous wars thrust upon her because of her unpreparedness. If our fellow-countrymen could have been educated in these matters during the between-war years, we might have been much better prepared for war, and it might even never have come. Is there hope of more being done for the education of the rising generation in the years immediately before us in a subject which so vitally concerns our national security and prosperity?

THE LECTURER : I suppose one of the major factors in the extraordinary attitude of the British public in the period between the last two wars was that very long period of peace which we enjoyed because of our own past wisdom and our own past naval and military victories. Between 1689 and 1815 we were at war for more than half the total period of 126 years and waged nine European wars. Between 1815 and 1914, with the brief interlude of the Crimean War, we had no continental war at all. Though after Waterloo we certainly did reduce our armed forces to a very low level, in the "twenties," "thirties" and "forties" of the last Century we were not as a people unaware of the greatness of our military tradition. We were, indeed, very proud of it. But in the 1920's and in the 1930's we did not appear to be so at all. I suppose because the interlude of the war of 1914-18 did not really bring home the reality of the connection between our liberties and of all that we most valued, and our success in war.

This last war has given us that realization. It has gone a long way to make people wiser. Whether they will continue wise is another matter. A great deal depends on how history is taught and written. One of the gravest charges that can be brought against my profession is that historians in the latter part of the XIXth Century ceased to take the trouble to make history readable and interesting to the ordinary reader. They painstakingly collected and published historical facts for one another's benefit. But if written history does not enlighten and instruct non-professional readers, at least those



who sway our destinies—and that to-day is the ordinary man—I really cannot see the point of writing it at all.

ADMIRAL SIR CHARLES LITTLE: I feel it is rather hard on the Lecturer to ask him any further questions, but there is one thing I feel rather strongly about. Captain Altham, if I understood him, referred to "two disastrous wars". They were disastrous—both of them, but they did not lead to complete disaster. If they had led to complete disaster we should not be here to-day, and we should not be thinking of that important problem which he raised, how to avoid wars in the future, because the Germans might have been here, as the Romans were, for two or three hundred years.

The Lecturer emphasized the folly of our policy of appeasement and unilateral disarmament, at the same time allowing Germany to arm under our noses. He then reminded us of the year when we stood alone, and fortunately managed somehow or other to keep the War going. He told us of Hitler's attack in the East, repeating the folly which Napoleon had committed, and he spoke of the Japanese attack at Pearl Harbour, which personally I knew a certain amount about—at least, being in Washington at that time, I realized the American attitude very well. That attack always seemed to me a complete folly.

What I want to ask is, supposing these follies had not been committed, supposing Hitler had stood back after the Battle of Britain and rearmed and used his immense capacity to build up again an enormous Air Force, profiting from the experience he had already gained, and had attacked England, and supposing America had not come in—Roosevelt was doing his best to help us, but there were limits to what America could do before entering the War—supposing that had happened, could we have prevailed?

THE LECTURER: I very much agree with the implication in Admiral Little's question. Wars are won by the side that makes the fewest mistakes, and the extraordinary mistakes the Germans did make in this war were undoubtedly of the greatest assistance to us. But I should like to state the corollary. In all the major wars of the past we have made most terrible mistakes. Where you have a parliamentary form of government it means that the ultimate decisive power in war usually rests in the hands of men who have never been interested in the study of war and who have to learn, like poor William Pitt, and at the expense of their country, from bitter disasters and mistakes. In this war, however, in its general strategic direction I cannot see that we made one single major mistake after May, 1940. And in this war there was scarcely a moment when we could have made a major strategic mistake without irretrievable disaster. But we did not make one.

As regards the implication in the first part of Admiral Little's question, I feel myself very much in agreement. I do not think—taking the broad view which we shall be able to take when the sufferings of our generation are forgotten—that the last two wars from our point of view can be described as "disastrous". It was for our enemies, happily, that they were disastrous. The only thing that distinguished those wars, particularly the last one, from previous wars was that they were far less comfortable for civilians. As far as the fighting man was concerned, there was nothing to choose between our comparative sufferings and losses in the last two wars and in earlier wars. It was only that the general civilian population became more conscious of the miseries and tragedies of war, even as sustained by an island population such as ours. But that does not mean that the sufferings and sacrifices we had to endure have ruined us. A war can only be waged by the labour and sacrifice of the people living at the time of it. One cannot borrow tanks or ships or guns from one's grandchildren. Nor, as a result, are we in debt to our grandchildren. We are neither bankrupt nor ruined. Our strength depends, as it has always depended, on the character of our people. And that, as 1940 proved, remains unimpaired. There is nothing the great people who transformed 1940 into 1944 cannot do if they chose.



## THE CHAIRMAN

At the start of his lecture Mr. Bryant said that he was going to try to give his impression of what the historian a century ahead would think of the recent war. We have been lucky to have had, as it were, an advance copy of what that future historian may write. It is very seldom one can read, still less frequently hear, the broad view expounded both in time and in space. We have had it to-day from one who sees the War against the background of previous history and as it affects the whole World. This has been clearly put before us in the short space of an hour, we are extremely grateful to the Lecturer and so will be that much wider circle who will read it in our JOURNAL.

I was struck not only by his breadth of view, but by his detailed knowledge. For instance, he referred, quite naturally, to the "battles" of the Rhine and of Berlin—not to "raids" as we so often used to see or hear them called. They were battles, with very high casualties, but so many people fail to grasp that fact. One last point. Mr. Bryant is a young man, and I think it would be a grand thing if he could write a book on the causes of wars—not going further back than say 2,000 B.C. ! I believe nothing like that has yet been tackled.

I ask you to accord a very hearty vote of thanks to him for the wonderful hour he has given us.

The vote of thanks was carried by acclamation.



## THE ARMED MERCHANT CRUISER—HAS SHE A FUTURE?

By COMMANDER W. B. ROWBOTHAM, R.N.

**T**HE employment of armed merchantmen as warships is of very ancient origin and goes back to the time when most merchant ships were defensively armed as a matter of course and up to the last war when they were still used to supplement the inadequate number of ships in the Royal Navy. But they were never a real substitute for warships designed and built as such, and eventually it was accepted that only a few selected ships should be earmarked to be fitted out in the event of hostilities.

In the general stock-taking of our fighting resources, it is timely to examine the record of the armed merchant cruiser during the last two major wars and to see whether they did in fact justify their existence then and, if so, whether it is likely that they would do so again.

Before the 1914-18 war it was known that the Germans had a number of cruisers and armed merchantmen ready to operate against our mercantile shipping. Our resources in regular cruisers being limited for combating this menace, on the outbreak of hostilities it was decided to equip thirteen large liners as armed merchant cruisers (A.M.Cs.) as soon as possible for commerce protection. The work was done by the shipping companies concerned with praiseworthy rapidity. Not all the vessels selected were in port (Liverpool, Tilbury and Southampton) on 4th August, but all were completed by about the 21st, and some as early as the 9th. Other vessels were also taken in hand elsewhere for conversion.

Preparations for arming merchant ships had been made long before 1914, though for the most part all that was done was to select gun positions, sites for magazines, etc., and prepare lists of what work would be involved when certain ships were taken up. When the time came, however, few of the intended alterations were rigidly adhered to, the ships being fitted out without much regard to the letter of the instructions on account of urgency; so long as they were completed quickly, the actual details of how it was done were of secondary importance.

### THE 1914-18 WAR

At first, the armament and equipment provided was none too lavish. All that was immediately available for each ship was eight 4.7 in. guns, mounted on a teak bed covered with a steel plate, the hull structure being stiffened underneath to take the thrust on firing. An exactly vertical position for the mounting was not insisted on. Magazines and shell rooms were constructed of wood and all fittings were of the simplest character. No provision had been made in peace time for fire control, but an emergency equipment, which included a range clock, a Dumaresq and usually a small rangefinder, and "telepad" communications, was provided when the ships were fitting out. Protection for the tops of the cylinders, which were well above the water line, was provided by steel plates reinforced by bags of coal. But, even after cutting away the superstructure, the arcs of fire of the guns were often unduly restricted. In fact, it was all rather "Heath Robinson," but the best that could be done in the time and with the arms and stores available.

Two of the largest liners, the "Lusitania" and "Mauretania," had been subsidised since December, 1911, and had been stiffened whilst building to take a 6-in. gun armament, but when war came it was tardily realized that they would be very uneconomical to run as A.M.Cs., and would be better employed as ordinary



merchant ships. They were, therefore, not taken up. Nevertheless, a third and even larger ship—the "Aquitania," completed not long before war broke out—was requisitioned. She also had been stiffened whilst under construction, and on 1st August, 1914, orders were given that she was to be fitted out as an A.M.C. with an armament of twelve 6-in. guns. Her career in that role was short. Within a fortnight of commissioning she collided with the S.S. "Canadian" and was obliged to return for repairs. It was realized, too, what could easily have been found out beforehand, that she devoured coal at such a rate that she could only remain at sea for a short time between staggering demands for refuelling; so on 9th September she was returned to her owners and eventually fitted out, at further great expense, as a hospital ship.

The immediate urgency to get some A.M.Cs. to sea soon passed. After the experience of running the "Aquitania" it was considered that smaller vessels were more suitable, the tonnage varying between 10,000 and 21,000; several vessels of about 6,000 tons were also taken up, which had a proportionately smaller armament.

By the end of November, 1914, 48 A.M.Cs. had been commissioned. Thirteen more hoisted the White Ensign in 1915, and five in 1916. In 1917 there was only one addition, and in 1918 the last vessel so taken up was still fitting out when the Armistice came. In all, there were sixty-eight A.M.Cs. at one time or another, totalling 741,761 tons, although on 11th November, 1918, only thirty were in service as such. Others were returned to their owners, purchased or else utilized as troopships, hospital ships, etc., after varying lengths of time. Thus it will be seen that the drain on the carrying capacity of the Merchant Navy was by no means negligible. Casualties were inevitable. Thirteen A.M.Cs. (139,400 tons) were sunk by enemy action, eleven being torpedoed by submarines, and four (39,769 tons) became marine casualties: a total of 179,169 tons.

The work of the A.M.Cs. was world-wide. At the beginning of the war they formed part of the many cruiser forces employed in hunting down commerce raiders and intercepting enemy merchant shipping. Many were attached to the famous 10th Cruiser Squadron on the Northern Patrol, where service was extremely arduous, especially during the winter months. When the convoy system was introduced in 1917, they constituted the ocean escort to homeward-bound convoys from North America and Sierra Leone; a duty also undertaken by regular cruisers. They were not debarred from carrying cargo when it could be arranged, and some were fitted to take about 700 troops. With the institution of convoy, several other merchant vessels were taken up and armed under the designation of "Commissioned Escort Vessels." They were really A.M.Cs. under another name, but their numbers have not been included in the foregoing totals.

Conclusive actions by A.M.Cs. with an enemy of equal force, however, were few and far between. In fact, there were not more than two throughout the whole war. The first action took place on 14th September, 1914, when the "Carmania" (Captain N. Grant) fell in with the German armed merchant raider "Cap Trafalgar" off Trinidad Island, in the South Atlantic. The fight was strenuously contested, both ships suffering severely from each other's fire, but in the end the "Cap Trafalgar" capsized and sank with her colours flying. The "Carmania," which by this time was badly on fire, eventually reached Abrolhos Rocks in safety, having lost nine men killed and twenty-six wounded.

The early anxiety of the Admiralty about the excessive damage which might be caused to mercantile trade by German commerce raiders was soon largely dispelled. It is of interest to note that, on the day before the "Carmania's" action was fought,



the Board had revised the policy : from hunting down German raiders A.M.Cs. were, as far as possible, to work in conjunction with a regular cruiser in order to assist her in bringing to action German cruisers, and were never to engage a ship they met unless she was distinctly of inferior force

The second encounter between A.M.Cs. and merchant raiders took place on 29th February, 1916. Warning had been issued by the Admiralty on the previous day that a disguised raider was coming out of the Skagerrak, and among other ships of the 10th Cruiser Squadron ordered to patrol North-East of the Shetlands was the "Alcantara" (Captain T. E. Wardle), which was on the point of being relieved by the "Andes" (Captain G. B. W. Young) to return to Liverpool to coal. But just before the two A.M.Cs. met to turn over orders, the "Alcantara" was directed not to quit the area as the enemy was expected to pass the patrol line during the day.

At 8.45 a.m. the "Andes," then within signalling distance of the "Alcantara," made the report—"Enemy, N.E., 15 knots"—but went off in chase apparently of some other ship. Captain Wardle closed the stranger and informed his consort that he intended to send an armed boarding party to investigate, to which the "Andes" replied—"This is a suspicious ship." But before the boat was even in the water, the ship dropped her Norwegian disguise and opened fire. A hot action then ensued, in which the "Andes" joined as she came up. Before long the enemy, which was the disguised merchant raider "Greif," was seen to be abandoning ship; but the "Alcantara" was in even worse plight, for she was hit by a torpedo and sank a quarter of an hour later. Her crew were picked up by the destroyer "Munster" which, with the cruiser "Comus" (Captain A. G. Hotham), was soon on the scene of action. The "Greif" was still afloat, but as a submarine was reported in the vicinity, the "Comus" and the "Andes" stood off and sank her by gunfire.

The result of the "Alcantara's" action showed that our 4.7-in. A.M.Cs. were undergunned and could be outranged by the 5.9-in. guns of the later German raiders. Six-inch guns were then becoming available, so one or two were fitted in place of the original 4.7's. The later A.M.Cs. were given 6-in. guns on first fitting out, and by degrees all the 4.7's were changed for 6-in. Other improvements followed. Steel magazines and motor ammunition hoists were installed, together with better fire control arrangements, etc. A further addition was two 3- or 6-pdr. guns as A/A armament, two 11-in. howitzers and four Type D depth charges. The later standard equipment was therefore a great advance on what had been originally provided.

#### INTER-WAR POLICY

The policy of taking up merchant vessels in time of emergency remained much the same during the period between the two wars. Provision was made for stiffening merchants ships to take one or more guns, either an offensive armament for A.M.Cs. or a defensive armament for trading merchant vessels; guns and mountings were stored and earmarked for these services and outfits of naval stores were assembled for the various types of merchant ship. This work was spread over the peace years, the money voted each year not being confined, of course, to the requirements for A.M.Cs. only. It is described in the Naval Estimates as "Work of a constructional character on non-subsidized vessels which, in case of emergency, may be required for Naval Service." Beginning with the 1921 Naval Estimates, £50,000 was voted for this purpose, decreased in 1923 to £25,000, and to £10,000 in 1927. In 1929 the decreased requirements called for not more than £2,500, a figure which, except in 1931 when it rose to £5,600, remained static until increased again in 1936 to £6,500. By



this time the war clouds were gathering, and in the following year £12,000 were voted. The year of "Munich" saw this sub-section of Vote 8 expanded to £60,000, and in 1939 the sum of £410,000 was set apart for this purpose alone. The agreement with the Cunard Co., whereby the "Mauretania" was retained at an annual subvention of £90,000, was terminated at the end of November, 1927.

#### THE 1939-45 WAR

The experience gained in the 1914-18 War enabled better provision to be made for arming and equipping A.M.Cs. in the event of a future war, though even then our A.M.Cs. started at a disadvantage, their 6-in. guns being outranged by the enemy. This was not the fault of the gun, but of the mounting. For a great many years the mountings for 6-in. guns were designed with not more than 15° elevation, which gave a maximum range of 14,000 yards, and these low-elevation mountings were all that were available for arming A.M.Cs. The Germans were better provided for in this respect, their 5.9-in. guns outranging our 6-in. by about 3,000 yards. Thus our A.M.Cs. had to fight under a great handicap. True, many of our cruisers had high-elevation (30°) mountings, but the number of spare mountings in store in 1940 could be counted on the fingers of one hand and these had to be kept in case a replacement was required. The time required to construct a new mounting of this type was far too long to satisfy immediate needs, so some of the 30° mountings in the D-class cruisers were transferred to the A.M.Cs., giving them at least two 6-in. guns on the centre line capable of the longer range. This decision was hastened after two inconclusive actions between A.M.Cs. and disguised merchant raiders in which the British ship was outranged on each occasion.

Habitability for their wartime duties was another matter which required attention. Many of the cargo liners taken up as A.M.Cs. usually ran in tropical waters for part of their peacetime voyages; they were never designed for working under Arctic conditions. Until they could be 'Arcticized,' therefore, their crews lived in great discomfort in winter on the Northern Patrol. A cabin fan is a useful adjunct in the Indian Ocean, but when cruising close to the ice barrier between Greenland and Iceland, for example, an electric radiator is much to be preferred. Also, in order to maintain the armament free from ice in northern waters, anti-freezing devices were a vital necessity. Facilities for drying wet clothes in quantity were not always available. When in harbour, an engine room with steam on the turbines can be used as a drying room for clothes and blankets, but if the ship is at sea such a practice is not possible.

Fifty cargo liners were taken up as A.M.Cs. in 1939, the first twenty-five being requisitioned on 23rd August, and the rest a few weeks later. Two more were converted by the Royal Australian Navy and one by the Royal New Zealand Navy. In all, there were fifty-three vessels totalling 783,137 tons. Their employment was on similar lines to that in 1914-18, viz., Northern Patrol, convoy escort, and a few on general patrol work abroad. But as early as January, 1940, it was found that the requisitioning of this large amount of shipping was already beginning to affect the available total tonnage of this class of vessel, and orders were given that no more were to be so converted. As additional warships were completed and the need for an anti-raider escort to convoys decreased—after 1942 German surface raiders had almost all disappeared off the seas—the A.M.Cs. were put to other uses. Some were returned to trade, while others were converted to repair and depot ships, etc. By April, 1944, the list of vessels employed as A.M.Cs. had shrunk to one only.



## A.M.C. LOSSES

The causes of loss in the two wars are very similar, as is shown in the following tabular statement:—

Cause	1914-18		1939-45	
	Gross tons	No.	Gross tons	No.
Submarine ...	109,208	11	156,836	10
Warship raider ...	—	—	30,861	2
Merchant raider ...	15,300	1	13,301	1
Aircraft ...	—	—	11,198	1 <sup>1</sup>
Mine ...	14,892	1	—	—
Burnt ...	—	—	15,241	1 <sup>2</sup>
Wrecked ...	29,398	2	—	—
Foundered ...	10,371	2	—	—
Total ...	179,169	17	227,437	15
Average tons ...	10,539	—	15,162	—

<sup>1</sup> Constructive total loss.

<sup>2</sup> Sunk by own forces.

It will be seen that the number of A.M.Cs. sunk by enemy action in the last war was fourteen, i.e., one more than in 1914-18. The average size of the ships had increased by about fifty per cent., the tonnage sunk increasing from 139,400 tons to 212,196 tons. In 1914-18 losses were incurred throughout that war, but in 1939-45 they all happened in the first half of the war. Ten A.M.Cs. were sunk by submarines between 5th June, 1940, and 13th May, 1941; one more became a constructive total loss after the Japanese air attack on Colombo on 5th April, 1942. After that date no A.M.C. was lost, either by enemy action or marine casualty.

Surface raiders exacted a heavier toll in the second war. Three A.M.Cs. were sunk—two by warships and one by a merchant raider—against one in 1916. As could only be expected, the two encounters with German heavy warships resulted in disaster. The "Rawalpindi" (Captain E. C. Kennedy), while on the Northern Patrol, met the "Scharnhorst" and the "Gneisenau" just before dark on 23rd November, 1939, and was sunk without being able to inflict more than trifling superficial damage on her opponents. There were only thirty-eight survivors, twenty-seven being picked up by the German ships and eleven next day by the armed merchant cruiser "Chitral" (Captain A. G. Peace).

On 5th November, 1940, a homeward-bound convoy from Halifax was attacked in mid-Atlantic by the "Admiral Scheer." The sole escort—the "Jervis Bay" (Acting Captain E. S. F. Fegen), at once closed the enemy, at the same time ordering the convoy to scatter; but she was easily sunk by the pocket battleship. Her sacrifice, however, was not in vain, for out of thirty-eight ships in the convoy, the raider succeeded in sinking only five ships and damaging two others. Captain Fegen saved most of his convoy, and was posthumously awarded the Victoria Cross.

The one conclusive action between an A.M.C. and a disguised merchant raider was equally disastrous. This took place on 5th April, 1941, in the South Atlantic, where the "Voltaire" (Acting Captain J. A. P. Blackburn, D.S.C.), then on passage from Trinidad to Freetown, was sunk by the "Thor" (Schiff 10). Casualties were severe: thirteen officers and sixty-three ratings were killed, and twenty-one officers (including Captain Blackburn) and 170 ratings were made prisoners of war.

The "Thor" was also engaged on two other occasions by A.M.Cs., though in each instance the action was inconclusive. The first action took place on 28th July, 1940, when the "Alcantara" (Captain J. G. P. Ingham) met the "Thor" to the



south-westward of Trinidad Island, in the South Atlantic. The British ship was outranged by 2,000 yards and had her speed reduced by a hit abreast the engine room. Nevertheless the range was closed, and as soon as the "Alcantara" began to hit, the enemy's rate of fire decreased. After about an hour the enemy had had enough and broke off the action, the "Alcantara" being too disabled to follow.

The second action also took place in the South Atlantic, this time about 400 miles E.N.E. of Rio Grande do Sul, when the raider was overhauled on 5th December, 1940, by the "Carnarvon Castle" (Captain H. N. M. Hardy, D.S.O.), then on her way to Montevideo. The opening salvos of the enemy outranged the "Carnarvon Castle's" 6-in. guns by 3,000 yards, but the range was soon closed to 14,000 yards, when the British ship scored several hits on her opponent, setting her on fire aft. Two torpedoes fired by the raider were successfully avoided. After three-quarters of an hour the range was down to 8,000 yards and the enemy, emerging from his smoke screen, reopened on the "Carnarvon Castle," setting her badly on fire. Captain Hardy therefore opened the range in order to get his fires under control behind a smoke screen. But the enemy was in no mood to continue the action and eventually made off.

#### CONCLUSION

What, then, has been the value, if any, of Armed Merchant Cruisers ?

(a) They made a large, unprotected target and their speed for cruiser work was too low for modern requirements.

(b) Although a poor substitute for regular cruisers, of which we had not nearly enough, they were useful for intercepting enemy merchant ships, particularly those attempting to break through the Northern Patrol back to Germany.

(c) As ocean escorts to a convoy they gave moral support to the crews of ships in the convoy and were capable of engaging on equal terms a disguised merchant raider; these enemy ships, however, invariably avoided a convoy. But, if attacked by a pocket battleship or a heavy cruiser, their destruction was inevitable, though giving the convoy a chance to escape. They were of no value as an anti-submarine escort, being just as vulnerable to attack by submarines as the ships they were escorting, and their principal utility lay in shepherding homeward-bound convoys to the rendezvous with the local anti-submarine escorts.

(d) Their armament and fire-control arrangements were inferior to those of the German merchant raiders at the beginning of the War, though these deficiencies were rectified in part at a later date.

It is well known that the shipping firms, and also the Ministry of War Transport, did not like this large number of the finest cargo carriers being taken away from their proper functions to masquerade as warships at a time when the heaviest demands were being made for their normal services. Much delay and enormous expense were involved in the conversion operation without producing an ideal instrument; but there was no alternative. For this state of affairs neither the Admiralty nor the shipping firms were to blame. Rather it must be laid at the door of those responsible for the London Naval Treaty, in 1930.

In conclusion, the sum total of the efforts of the Armed Merchant Cruisers seems scarcely commensurate with the results achieved. New wars produce new weapons and new types of ships. Like the decoy or Q-ship of 1914-18, the Armed Merchant Cruiser has seen its best days, and it may be doubted whether, in any future war, these armed types of Auxiliary will ever be resurrected.



## THE GERMAN AIR FORCE

### A REVIEW ARTICLE

By AIR COMMODORE R. E. VINTRAS, C.B.E.

[An account of the development and achievements of the *Luftwaffe* is a timely complement to Air Vice-Marshal Sir Thomas Elmhirst's lecture last October on "The German Air Force and its Failure"<sup>1</sup>, and Wing Commander Lee's book<sup>2</sup>, although "in no sense official", is the product of a former intelligence officer which has received the blessing of no less an authority than General Carl Spaatz, Commanding General U.S. Army Air Forces.]

IN producing this book, the author has brought off a considerable *tour de force*, and there is ample apology for any shortcomings, in the concluding chapter. If the main themes do not always stand out as clearly as one would like, they are there for the thoughtful reader to discover, and anyone who studies the history of the German Air Force will find that lessons and conclusions do not spring readily from its pages and that there are many pitfalls for the unwary. For instance, it has been asserted that two cardinal and elementary mistakes were the failure to construct a heavy bomber force and, in the final stages, the dissipation of resources in the production of over-specialized experimental aircraft and secret weapons. These over-simplifications, however, begin to look less sound when one realizes that the Germans could never have produced enough petrol even to train a heavy bomber force, as we came to understand it; and, in the throes of a gigantic land war in the East, on a scale which we do not always appreciate, they certainly had insufficient productive capacity to make the necessary numbers of large aircraft, even had their technical development in this direction been more successful than it was. Again, it soon becomes apparent that the trouble in 1944 was not that specialized research and production operated to the detriment of more conventional aircraft, since nearly 40,000 fighters were produced during the year; the trouble was more that interest in advanced technical development had not manifested itself earlier in the day when the new aircraft and the secret weapons could have played their part with greater effect. But all these considerations are overshadowed by the effects of faulty grand strategy, to which reference will be made later.

The most significant part of the book, and a story which is well traced, is the narrative of the first three years of the air war—a period which, now, unfortunately, seems to hold less interest than recent, happier and more spectacular events. But it was in the first years of the War that the best lessons were taught, and this is a timely reminder of their significance. "I have done my best," said Goering in 1939, "to make the *Luftwaffe* the largest and the most powerful air force in the world. The creation of the Greater German Reich has been made possible largely by the strength and constant readiness of the *Luftwaffe*. Born of the spirit of the German airmen in the First World War, inspired by faith in our Fuehrer and Commander-in-Chief—thus stands the German Air Force to-day, ready to carry out every command of the Fuehrer with lightning speed and undreamed-of might." What, then, went wrong, and why did the course of events—which might well have been foreseen by the German High Command—belie this early confidence? Wing Commander Lee has put his finger on the reason with refreshing simplicity when he says, "... it may have been due to the fact that it was not quite big enough." The more one

<sup>1</sup> Published in the JOURNAL of November, 1946.

<sup>2</sup> *The German Air Force* by Wing Commander Asher Lee, O.B.E., R.A.F.V.R. (Duckworth). 21s. od.



considers this problem, the more one is impressed by the fact that the whole trouble with the Germans' conduct of the War was that they did not think it out carefully enough before embarking on it, and that, when it began to go wrong, they made things worse instead of better by pursuing courses of action entirely at variance with the realities of the situation. The German Air Force was conceived and developed for the *blitzkrieg* and, until the Battle of Britain, it undeniably worked extremely well. Poland, Norway and France were defeated within a timetable which set new standards in offensive warfare. And there, at the *schwerpunkt* of every attack, was Goering's *Luftwaffe*. Not only did it play its role of supporting the army over the battlefield with commendable efficiency, but it also began to show that it was capable of that remarkable flexibility to which we heard tribute paid by Sir Thomas Elmhirst, and which it was to retain, however much its punch was failing, almost to the end. But while the German squadrons were holding the world spellbound by their dash in Norway, the actions of a few British fighter pilots, which passed at the time unnoticed, should have given the German Supreme Command food for thought. For whenever a British squadron could get a foothold on the frozen lakes, their success was immediate and unmistakable, and it should have been obvious that there was nothing wrong with the personnel of the Royal Air Force, and that all they needed was equipment and power of movement. Instead of appreciating that in no circumstances must their enemies be allowed to acquire those things, the Germans even neglected what they had of them themselves.

The Battle of Britain should have been the last campaign of the *Luftwaffe*, as designed. It is easy to find fault with this design in the light of later experience—lack of long-range fighters, lack of gun turrets, and so on—and it is easy to pour scorn on Goering's pre-war boasts that he could invade England from the air. He did not mean that he could fly in the necessary troops with his transport aircraft in the face of an unbroken air force, but he did mean that he could defeat the air defences, and then do so. In this he proved to be wrong, and I suggest the reason was in fact that the *Luftwaffe* "was not quite big enough." If the personnel of our fighter squadrons had preached a lesson which the Germans did not heed in Norway and France, their equipment certainly helped them to repeat it in the Battle of Britain. But again, the lesson passed unlearned, and it is here that things started to go seriously wrong. The Battle of Britain is often described as the turning point of the War, and it is a fact that after it the *blitzkrieg* was over, although the Germans often succeeded in giving the impression that it was not. Incidentally, there is a tendency nowadays to suggest that the Battle of Britain was without the significance usually accorded to it, because Hitler never seriously contemplated invasion. It is true that he was never properly prepared for it and that the situation after Dunkirk came as a surprise, but there is no doubt that Goering had persuaded him that the German Air Force could pave the way and, had Fighter Command gone under, there are few who would dare call this an idle boast. Once the *Luftwaffe* had lost that battle, Hitler may have lost interest, although Siebel was made to work feverishly at his ferries, and preparations for invasion still went on. But, for the German Air Force, it was metaphorically a case of putting off the Eagle Day, until it became a vague item on the next year's agenda in which no-one really believed.

In the Autumn of 1940, the *blitzkrieg* became another sort of war, strange and unfamiliar, for which the *Luftwaffe* was quite unprepared. The first indication of this was provided by the German night bomber offensive, because, although Lee maintains that the German's unpreparedness for night bombing was a fable, they



were demonstrably even more unsuccessful at this than they had been in the daylight offensive aimed primarily at our fighter squadrons. Perhaps the first significant confession of failure, though its authors did not realize it to be so, was the move of part of the German Air Force to the Mediterranean during that Winter for a sharp attack on Malta. Though this move to the South developed into the first Balkan campaign, the attack on British communications in the Mediterranean was the first indication that the night bombing offensive was not going to do the trick. The *blitzkrieg* was over, and new and untried strategic vistas stretched before the German High Command. Moreover, the first big drops of the thunderstorm were already falling on the Fatherland and, no doubt, Erhard Milch was beginning to marshal his facts for the long and bitter campaign before him, which, in the end, turned the *Luftwaffe* from a sword into an umbrella—too late.

The next venture, however, certainly had the appearance of being another *blitzkrieg*—a campaign much better suited to the *Luftwaffe* than the less familiar work of assaulting intractable islands. But by now the German Air Force, together with the rest of the Nazi war machine, was getting right out of its depth, and the entry of Russia, and then America, fundamentally changed the whole character of the struggle to such an extent that a new and different sort of Air Force was required. Not only did the Germans fail to appreciate this, or to realize that their enemies might well have learnt much from what they had already seen, but they fell into the fatal double error of overestimating the past achievements of the *Luftwaffe*, and underestimating the future possibilities of air power. It is not possible to say whether at this stage they could have pulled the chestnuts out of the fire, but there can be no doubt that if they had given sober thought to the situation in the Spring of 1941, they would have perceived that it demanded, not an attack on the strongest land Power on Earth, but the construction of an air force which would ensure that the one really vital prize—that of air superiority—was secure. Once the attack on Russia had been launched, all was lost; but it need not have been lost quite so painfully if they had listened to Milch instead of to Udet, and constructed their umbrella in time for it to be opened before the downpour started. As it was, Hitler, by this time quite out of control, and mentally reliving the palmy days of 1939 and 1940, saw Russia defeated in plenty of time for England to be disposed of before America woke up.

Hybris swayed the councils of the German High Command in 1941 and Nemesis overtook their arms in 1942. The stopgap strategy failed. Russia held, not security, but a hungry quicksand into which German resources were drawn without result. The Mediterranean and North Africa provided plenty of excitement but no dividends, and as the year drew to its close, Alamein and Stalingrad set the seal on the bankruptcy of German strategy. In the new year, I was privileged to attend two historic meetings which signed the death warrant of German air power. In January 1943 at Casablanca, Portal and Arnold decided the Anglo-American air offensive—bombing round the clock and round the compass. A week later, in a villa in Algiers, Tedder and Spaatz met for the first time, to discuss the fusion of the great tactical air forces which were already making the day of the dread dive-bomber seem quite remote, and a cold wind was blowing from the East. Germany was on the defensive, and the Allies were developing an offensive strategy to which there could be only one result.

For the last two years the *Luftwaffe* had been living on its accumulated reserves and no provision had been made for a major setback involving a defensive in the air. Even now, no clear-cut decision could be reached, and Udet's suicide in the Autumn



of 1941 had been too late for practical, painstaking little Milch—not really the self-seeking ogre of Lee's book—to start the necessary reorganization in time. By the end of 1942, however, it is doubtful whether even the most radical decisions could have done anything to save the air war, for by now *necessity* was beginning to gnaw very hungrily at the *Luftwaffe*. By October, it was decided to increase the strength of the German Air Force Field Divisions fighting with the army to 50,000 men. Reserves of fighter pilots began to fail and the disruption of bomber training followed. And so the power of mobility and concentration, which had been so dazzling, began to pale beside the achievements of other air forces, in a war which was leaving the *Luftwaffe* behind.

The trouble was that the whole German High Command was a mirror of Hitler himself. Either the perspective was too wide or it was too narrow: Hitler could deal only in grand strategic designs or split-pins—there were no half measures. So it was with the High Command, for whom victory was always just round the corner. Something would turn up. Meanwhile there was no plan, and almost worse still, no organization: no Joint Planning Staff or Joint Intelligence Committee, or Secretariat; in fact, no system at all. The Eastern front was run by O.K.H., the other fronts by O.K.W., but nothing was run by O.K.L. which could hardly even run itself amidst the clash of rival strategic and tactical ideas put forward by anyone who could secure the ear of Hitler or Goering. In all this discord, Milch was about the only stable element, refusing to behave like a one-armed paper hanger, but trying persistently to build up the fighter resources against the storm that burst too soon. "We remained voices crying in the wilderness", sighed poor Koller. Not only was the grand strategy hopelessly at fault and the High Command badly organized, but the whole war economy of the country was almost without co-ordination. Hitler would not listen to Speer, who was given his head too late and, finally, after two more bitter years as the ring of steel relentlessly closed, the whole armament was to go down in a nightmare of divided counsels, makeshift, plenipotentiaries and despair. Under the crushing weight of the air power the Germans had neglected, the magnificent scientific achievements, the miracles of organization in the aircraft factories and the dogged tenacity of the *Luftwaffe* were all to be of no avail.

If the German High Command could not anticipate these events, one may wonder why their intelligence organization at least did not give them some warning. But victors are notoriously bad intelligence officers, and General Schmid was no exception. "In a future war," said a German General in 1938, "the side with the best aerial reconnaissance will win." With commendable attention to this excellent precept, the Germans sometimes devoted as much as 25 per cent. of their strength to reconnaissance, but, like everything else to do with the *Luftwaffe*, its reconnaissance policy refused to grow up and, as the War began to leave it behind, the Germans found their reconnaissance aircraft quite unable to obtain the information they required. Thus, not only did the Allied landings of 1942 and 1943 achieve a degree of surprise fantastically out of keeping with what should have been the realities of the situation, but the great Invasion itself broke quite unheralded, as if something had been brewing behind the green and white coastline of England so horrible that the German leaders shrank from its very contemplation. Too late again—the first burst of real technical achievement since the War was just bearing fruit, and what might have been the finest medium-range reconnaissance aircraft in the world was being wheeled out of the shed.<sup>3</sup>

<sup>3</sup> This Arado 234, which operated across the North Sea in the closing months of the War, is shown in a photograph facing p. 199 of the book.



But this was not the only branch of Air Intelligence which failed. The German technical intelligence branch did not foresee the advent of the American long-range fighters, so that their presence over Berlin left Goering muttering, like the old lady looking at the giraffe, "It can't be true. It can't be true." But when Martini begged the Reichsmarschall's permission to experiment with anti-radar tape, he was peremptorily refused leave to dabble in such suicidal matters, and when it came the German children called it "angels' hair." Apart from the Fuehrer himself, the biggest bane of the German High Command must have been the prevailing servility, which prevented their arriving at the truth about any matter which they sought to consider.

The main lines of all this are well brought out in Wing Commander Lee's book. If the chapter on Army Support is a little weak, this at least is a lesson we learned well, and are unlikely to forget. The Battle of the Atlantic is well covered, and provides a timely reminder of Atlantic geography. "In appreciating a large organization like the *Luftwaffe*," says the author, "which represented the combined efforts, ideas and achievements of several million Germans, in factories and offices, on airfields and in battle skies, one is bound to weigh the evidence according to personal tastes, casting perhaps unmerited scorn on some of the *Luftwaffe* dilemmas of the 1943-45 period and crediting it with more than it deserves in the triumphs of the 1939-42 period." True enough. I am inclined to think that the German Air Force itself made fewer mistakes than is generally supposed. There was too much individualism, and too little staff discipline, and this hampered the evolution of a sound air staff operational policy; but it kept going remarkably well, considering the ruination of its resources and the hopeless expansion of its commitments at the hands of the Fuehrer and his satellites.

For many of the sidelights the reader must search by himself: the things the German Air Force taught us—pathfinding, fireraising and mining; the history it made—parachutists on the Aalborg airfields, gliders on Eben Emael, Crete, Kesselring first airman to be Supreme Commander of a theatre, the flying bombs and the jets. Some may consider that the air-sea war in the Mediterranean is inadequately covered. Others would have preferred more of the night-bombing story. But the author has done a good job, and one must constantly remember that this book is about the German Air Force, and portrays the War from the German, and not the Allied, viewpoint. He is to be congratulated; and the British and American publics are fortunate in having this authentic record placed in their hands so promptly. For the professional student there is an official account of these events, and this book will stimulate interest in it. For all others *The German Air Force* is more than adequate.



## THE DEVELOPMENT OF MECHANIZATION DURING THE 1939-45 WAR

By LIEUT-GENERAL SIR GIFFARD MARTEL, K.C.B., K.B.E., D.S.O., M.C.

**T**WO articles have already appeared in this Journal dealing with the subject of the development of mechanization up to the outbreak of the War. The war period has been dealt with as regards tanks and anti-tanks by an excellent article written by Brigadier R. P. Carver which appeared in the Journal of February, 1946. It might therefore appear that all the necessary information had been supplied. This, however, is not entirely true. The two reports prepared by the Select Committee on National Expenditure during the War and dealing with tank supply have now been published.<sup>1</sup> Without knowing the whole situation these reports are very misleading in certain ways. Moreover, Brigadier Carver does not attempt to throw any light on this side. It is probably fair to claim that in my capacity as Commander of the Royal Armoured Corps, I had the best possible chance of appreciating the whole position; moreover it was clearly laid down that, although I naturally made recommendations from the experience gained on the various battle fronts, I had no responsibility for the design and production of tanks. This work was controlled entirely by the General Staff at the War Office. I am therefore in a completely impartial position.

In the last article we saw that at the outbreak of the War we were ahead of the Germans on the heavy tank side with our Matilda tanks, though we only possessed them in small numbers. As regards cruiser tanks for the mobile role, we possessed a type which became known as the Crusader. This had a good performance but was unreliable, and the mechanical defects were not rectified until the end of 1942. The Ministry of Supply have never attempted to excuse this failure, which was due to bad organization and difficulties in the early days of the formation of this new Ministry. The slowness in the introduction of heavier guns both for tank armament and for anti-tank purposes is, however, in quite a different category.

At the start of the War the production of 2-pr. guns was beginning to flow. All nations were using a gun of about this size for these roles, but the Germans had made their 37 mm. guns (a little lighter than the 2-pr.) in great numbers. They had all that they needed, while our forces were only just beginning to receive their guns. On our side we had shown foresight in making and testing the pilot model of a 6-pr. to replace the 2-pr., when that necessity should arise. As funds had not been made available till such a late hour, we could not possibly have done more. At Arras in France in 1940, Rommel's Panzer division suffered heavy casualties in an attack by the 50th Northumbrian Division with a brigade of Matilda tanks attached to the division. Twenty of his tanks were left burning on the battlefield.

As a result the Germans took immediate steps to introduce a bigger gun both for tank armament and anti-tank work. They decided on a 50 mm. gun (about 4½-pr.). All the necessary jigs had been prepared in peace-time and they changed all their production to the new 50 mm. gun. We met this gun in the Spring of 1941, and the problem arose as to what we should do. Our 2-prs. were at last in full flow, though there was still a great shortage of these guns. Tank production was going ahead based on a 2-pr. gun in the turret. If we stopped all this work, we could have changed in say six months to an output of tanks with 6-pr. guns and to anti-tank

<sup>1</sup> Cmd. 6865.



guns of that calibre. Could we at that stage take the risk of stopping production for that period? There was no other industrial capacity where the 6-pr. could be made without disturbing the existing programme of production. It was a difficult decision.

A compromise was accepted. I do not think that the War Office could have done anything else. If the Ministry of Supply had started off as a well-established affair instead of a new and hastily raised organization, the introduction of heavier guns might have come a little sooner, but when you start a war some five or six years behind the enemy on the production side you are bound to have serious difficulties for the first two years of it. As a result we did not begin to receive cruiser tanks equipped with 6-pr. guns till the Battle of Alamein, and the 6-pr. anti-tank guns only arrived a little earlier. Brigadier Carver says:—"The lesson is that development and design must not wait upon the demands of the user, but must by imagination and foresight forestall them." There was no lack of foresight by those that led the armoured forces, but it was certainly lacking in the rulers of our country when they failed to give us the necessary funds to equip ourselves in sufficient time for the War.

The Cromwell tank began to arrive shortly after Alamein and was in full production in 1943. This tank was constructed on similar lines to the Crusader but with far better armour and armament. A 75 mm. gun was used as a dual purpose weapon for high explosive or armour-piercing work. The armour was 76 mm. thick in front and 63 mm. on the sides, and the tank weighed 28 tons. This became the best cruiser tank in the world at that time. It was superior to the Sherman tank and even more reliable.

As regards heavy tanks, the Churchill replaced the Matilda in 1942. It had some very troublesome growing pains when it first emerged from production, but these were overcome and the Churchill became a very valuable and reliable tank. The Ministry of Supply had found their feet at last and were doing splendid work. During 1942 the Churchill was the best heavy tank in the world. It performed splendidly in North Africa and Italy. Some of the tanks had 6-pr. guns and some had 75 mm. dual purpose guns. The armour was 90 mm. thick in front and 75 mm. on the sides, and the tank weighed 37 tons.

Up to this period we had depended to a large extent on the Sherman tank. The great industrial capacity of the United States had enabled them to produce this tank in large numbers. It is of interest that the design of the fighting body of this tank was largely the result of recommendations made in America in 1940-41 by British officers who had fought at Arras and in North Africa. In 1943 America formed the view that the Sherman tank was "good enough to win the War." It was a splendid tank and very reliable, but it is always a mistake to stop development, and by the end of the War this model had fallen behind in design compared with the tanks of other nations. The Sherman was originally designed to fill the roles of both infantry and cruiser tank, and had therefore to be in the nature of a compromise in design. It carried a 75 mm. gun; the armour was 75 mm. thick in front and 45 mm. on the sides; and the tank weighed 30 tons. In speed and handiness it was below the performance of the Cromwell.

Early in 1943 we were therefore well set. The Cromwell was just arriving as the cruiser tank. The Churchill had done well as an infantry tank, but a new and improved model was already overdue. We had been pressing for this for some time from the Armoured Forces, and some work had been done on a pilot model. At this stage, however, the Eighth Army gave it as their view that one tank of the Cromwell



or Sherman type would suit for all purposes. This was a natural view for them to take. They had been fighting entirely in the open desert where cruiser tanks filled by far the most important role, but most of the leaders of the Armoured Forces were opposed to this view. We knew that the Germans were changing their output from cruiser tanks to heavy tanks. They had been forced on to the defensive, and heavy tanks were what they needed for that role. The days of a *blitzkrieg* were over for them. When we came to the close fighting in Europe it was certain that we should need heavy tanks to compete with the Tigers and Panthers which we knew they were building, though we did not see the first of these tanks till February, 1943. Of course the need for the cruiser tanks was even more urgent for the mobile role, as we would be assuming the offensive.

It was at this time that I was sent to Russia as head of the British Military Mission and I had no more say in this matter. A good deal of work had been done on the provision of the next model of heavy tank, but the decision was taken that the Ministry of Supply should concentrate on producing one type of tank fitted to fill both roles. The Comet tank was produced for this purpose. It was an improvement on the Cromwell, but it could not carry anything like enough armour or armament for the heavy close fighting role against the Panthers and Tigers.

We had now reached the last phase of the war—the Battle of Normandy and the advance to Germany. Both the British and American armoured forces performed splendidly. The British armoured forces were a united team. We had come to a common agreement on every subject and on all the various fronts. We had settled on an organization and on a technique for armoured warfare which was copied by the other nations and which we retained without any change throughout the War. When the time arrived, the British and American armoured forces broke through and advanced at a great speed and caused complete confusion in the enemy ranks. This was the most important role and it was well that we had such good tanks as the Cromwells, Comets and Shermans for this purpose. But much close fighting had to be done before we could break through. For this work our cruisers were almost useless against the German Tigers and Panthers. In a similar way the Tigers and Panthers were quite unable to stop our cruisers in the mobile role.

If it had not been for this contrary decision, the next model of our infantry tank could easily have been produced in limited numbers for use in the close fighting in Normandy. For this purpose a certain number of Churchill tanks were available which carried extra heavy armour, but we needed a far larger step forward for our new design of infantry tank in order to be able to face up to the Tigers and Panthers. Each of these tanks had armour 100 mm. thick in front and about 60 mm. on the sides. The Tiger carried an 88 mm. gun and weighed 60 tons. The Panthers carried a 75 mm. gun and weighed 45 tons. It is unfortunate that the next model of our infantry tank was never put into production. If this had been done the infantry tank which we would have produced would have blown the Tigers and Panthers clean off the battle field. Our armoured forces would then have met with equal success in both the close and the mobile roles in the final stages of the war.

Before the 1939-45 war the design and production of war material was carried out by the Master General of the Ordnance Department under the direct control of the War Office. Looking back on this war period, it is clear that a great mistake was made when the War Office agreed to relinquish this control and allow the M.G.O. department to be absorbed into the new Ministry of Supply, just before the outbreak of the Second World War. The Admiralty would never have



agreed to part with the control of the design and production of warships and naval gun mountings under such conditions, and the War Office should have made a firm stand against this measure.

It is clear that some Ministry was needed at that time to allot the available capacity of the engineering industry in the country between the three Services. This could have been quite a small and simple Ministry, but when this capacity had been handed over to the Service concerned the executive work in the control of design and production should have remained the responsibility of that Service.

In the case of the Army the M.G.O. department would then have continued to carry out this work under the control of the War Office. They had done very well in the few years immediately before the War. If this simple plan had been adopted the Crusader tank would certainly have appeared as a thoroughly reliable machine quite early in the War, and the Cromwell tank which gave us a definite lead in cruiser tanks would have appeared at an earlier date. It is probable that heavier guns would have been introduced as tank armament a little sooner. Whether we should have avoided the mistake which we made in failing to produce the next model of heavy tank after the Churchill is less certain. The decision in either case would have rested with the General Staff at the War Office, but the existence of a strong technical organization within the War Office might well have saved us from this mistake.

About half way through the War suggestions were made in high places to re-establish the M.G.O. department. By that time, however, the Ministry of Supply had settled down and was working well. No one was prepared to face the disruption of a change back, and it would probably have been a mistake to do so at that time. Whether we should now retain the Ministry of Supply in peace-time or revert to control by each Service Ministry is a controversial question, which is outside the scope of this article.



## MAINTENANCE OF THE ROYAL AIR FORCE OVERSEAS

By GROUP CAPTAIN B. S. CARTMEL, O.B.E.

**W**ITH the Royal Air Force now resuming its pre-war garrison status throughout the World, and the one remaining Tactical Air Force reduced to a shadow of its former self, it is perhaps a suitable moment to review the methods adopted and developed for the maintenance of the Royal Air Force overseas, to outline the types and functions of some of the units employed, and to offer suggestions for future organization and training. Short memory is perhaps a trait of the average British character, but it would be regrettable, even disastrous, if past lessons and experiences gained in the greatest of all wars, and in which air power played such a prominent part, were relegated to the realms of history and oblivion. It is already becoming apparent that the true significance of Air Force mobility and maintenance under such conditions is still only appreciated by "The Few," no doubt due to the fact that only a relatively small proportion of the Air Force was fortunate enough to participate in mobile operations, and releases from the Service have resulted in so many experienced officers and men returning to civil life. But these losses are not irretrievable and may amply be compensated by training so that should another crisis arise all branches will be able to play their part efficiently and collectively as a maintenance team.

The advent of the atomic bomb and controlled weapons such as the long-range rocket may ultimately result in alterations to the structure and disposition of the Royal Air Force to deal with problems of Imperial Defence, but until it is known how these weapons will develop, few basic changes are likely to be made. Discussions in this paper will therefore be based upon this thesis.

### THE ABYSSINIAN CRISIS, 1935-36

To trace the development of modern maintenance and support methods, it might be appropriate to review briefly the situation in the Middle East during the Abyssinian crisis in 1935-36. At that time war with Italy seemed imminent and, to strengthen the Middle East garrison, certain bomber and fighter squadrons with supporting ancillary units were sent out from England through the Mediterranean. None of these squadrons had participated in a reinforcement of this nature before; it was the first time that an Air Stores Park had been formed for active service in the field, and the suitability of the aircraft and the equipment with which they were to be maintained under Desert conditions had not apparently received serious consideration. It was not long before the Demon Squadron, established for the fighter defence of Alexandria, was grounded owing to the ingress of sand into the Kestrel engines. Bristol Bulldogs, although no doubt satisfactory for Home defence on permanent English airfields, for reasons of restricted endurance and the non-existence of long-range tanks caused severe headaches before they could be flown from Port Sudan to Khartoum across the Desert via Gebeit and Atbara. It had been overlooked that bomb trolleys with narrow solid wheels, while no doubt satisfactory on permanent airfields in the United Kingdom, might be utterly useless under conditions existing on the sand airfields around Mersa Matruh.

The fact that there was no pure water available in the Desert and that brackish water drawn from wells was unsuitable for aircraft radiators did not result in any plans or provision being made beforehand to obtain supplies in sufficient quantity and in suitable containers from the Delta.



The organization for the supply of fully operational reserve aircraft to replace battle wastage was practically non-existent, and even now it is disturbing to think to what the operational strength of the Western Desert Air Force might have been reduced in the first month had full-scale operations begun in the Autumn of 1935.

Road and rail communications to Mersa Matruh were poor and unreliable and it is doubtful whether the transportation capacity could have maintained the Air Force for any length of time under intensive operational conditions, bearing in mind that this was also the only L. of C. for the Army. The use of Coaster traffic was out of the question owing to the vulnerability of the harbour from air attack and lack of dock and port facilities, and in those days landing craft did not exist and the technique of supply and maintenance over beaches had never been practised or considered.

The Line of Communications from the Delta to the Sudan for supplies was long, slow and laborious, involving rail, road and sea with several intermediate transshipments. The air line of communications for short-range fighters was undeveloped and, had replacement of battle casualties become necessary, it is doubtful whether the one fighter squadron could have been maintained at operational strength. The same might have applied to the three bomber squadrons.

These and many other problems had to be solved before the Force could be regarded as operational, and at the end of the "Emergency" an interesting and comprehensive report was written by Headquarters, Middle East, drawing attention to these difficulties and suggesting recommendations for their rectification. Perhaps, in retrospect, it can be said that this "exercise" was the fledgling of our modern maintenance science, for it proved that not only were our aircraft entirely unsuitable for a major war under tropical conditions but also we had neither the equipment nor the organization in being to keep even a few aircraft flying for perhaps more than a few weeks. The succeeding two years brought little new development in this problem and we were apparently content to rely on the static Aircraft Depot principle as our sole means of providing Base Maintenance overseas, without any plans for developing closer support for operational units as we understand it to-day. It was not until the Munich crisis in the Autumn of 1938, when war with Germany seemed unavoidable, that our unpreparedness became all too real and new ideas began to be translated into practice. If plans for the maintenance and reinforcement of an Overseas Air Force Base were being considered after 1936, they did not materialize in the Middle East before the end of 1938, in spite of the fact that that Command had occupied the focal point of a major crisis three years earlier.

#### FRANCE—1939-1940

Returning from the Middle East at the end of 1938 with these disturbing thoughts in my mind, it was comforting to learn that a plan had been prepared for the despatch of an Air Striking Force to France in the event of war breaking out with Germany. This force included supporting ancillary units such as Air Stores Parks and Repair and Salvage units, but apart from those directly responsible for their formation, little was known of their organization, mobility status and method of operation by those responsible for their control and operation in France. As far as the Air Stores Parks were concerned only one officer had had practical experience of such a unit (if nine static months under canvas in the Sudan could be called "experience"), and it was not long before these units became static depots in miniature and as a result were compelled to abandon much of their equipment when the German breakthrough came in May, 1940.



No allowance in the plan had been made for an Ammunition Park to support the ten battle bomber squadrons. The intention was to operate the Ammunition Railhead organization as laid down in the obsolete War Manual. This broke down completely in the first fortnight, fortunately when no operations were taking place, and eventually a Forward Ammunition Park was formed which became as static as its counterpart Air Stores Parks.

In spite of innumerable and insuperable difficulties during the roll back to the French West coast, these units did excellent work, and no serious disruption in supply and maintenance arose which adversely affected the magnificent operational effort of the battle squadrons and the two supporting Hurricane squadrons. A third Hurricane squadron joined the force while operations were at their height.

There were no Support units either in France or in the United Kingdom for the immediate supply of aircraft and aircrews and to replace battle wastage such as later existed in the Western Desert, Italy and ultimately in Operation "Overlord."

Serious though the outcome was of those disastrous and hard-fought six weeks, a wealth of experience was gained which was later developed and perfected by Middle East Command in the Western Desert and elsewhere in the Mediterranean.

#### MEDITERRANEAN—1941-1944

Many books and articles have been written on the epic campaigns in North Africa culminating in the capture of Tunis and the final defeat of Italy, but little mention has been made in any of them of the unromantic yet brilliant part played by the R.A.F. maintenance organization, from the mobile units such as Air Stores Parks, Repair and Salvage units, Supply and Transport Columns, General Transport Companies, Mobile Signals Servicing units, Mobile Parachute Servicing units, to the vast and intricate Base organizations in Cairo, Alexandria, and elsewhere in the Delta, without which the intensity of air operations could not have been maintained. Philip Guedalla has, however, devoted one chapter of his book "Middle East, 1940-1942" to this work. Later, with the formation of the Mediterranean Allied Air Forces, the control of this set-up passed to the Director of Maintenance and Supply, who, with the Senior Air Staff Officer and Air Officer-in-Charge Administration, formed a "third leg" of the Staff. As the hard-core of maintenance in 1944 was still in North Africa, the Director of Maintenance and Supply retained his main staff in a separate Headquarters in Algiers, but a small nucleus staff was established with advanced Headquarters M.A.A.F., in Caserta, to deal with problems in first and second line maintenance and supply in the field and to assist No. 214 (Maintenance) Group in Naples in developing certain maintenance units in Naples, Bari, Brindisi, and elsewhere, in direct support of the Desert, 1st Tactical, Balkan, Coastal and Strategic (Bomber) Air Forces.

Base units in the Delta, Malta, North-West Africa and Italy ultimately ranged from equipment depots to major repair units dealing with both multi-engine and single-engine type aircraft and engines; propeller repair and construction to aero and M.T. tyre repair units; parachute repair to aircraft erection units; ammunition depots to M.T. chassis and engine repair depots; marine craft and engines to barrage balloon servicing units; signals and radar repair to gun turret repair and testing sections; transport aircraft repair units to instrument repair shops.

Ex-operational pilots and aircrews were established in the appropriate Aircraft Repair units to carry out test routines on aircraft on which they were experienced,



to ensure that they were sent back into reserve storage or into the Tactical Support units up to fully operational standards.

There was a special staff to deal with petroleum products which was responsible for forecasting and co-ordinating the requirements of the Air Forces for current and future operations.

To ensure the speedy distribution of equipment, engines and other items in short supply and to enable repairable engines and equipment to be brought back to the respective maintenance units for repair and overhaul, a small transport flight of Liberator and Halifax aircraft was established and operated under the direct control of the Director of Maintenance and Supply.

At first sight this would appear to be an unnecessarily large and costly organization, but when it is recalled that it supported the whole North African theatre, Malta, Sicily, Italy, Greece, the Levant, Corsica, Sardinia and ultimately Southern France with the results which are now well known, it is undeniable that it repaid a handsome and profitable dividend.

The essence of its success lay in the spirit of team work, energy and foresight in all the branches which collectively were called "Maintenance," i.e., Engineer, Armament, Signals, Radar, Electrical, Explosives, Equipment and their allied subsections. This spirit permeated from Air Headquarters down into groups and units, both at Base and in the field, and a mutual trust, understanding and confidence was prevalent everywhere. In all spheres and at all levels the supply and technical services were closely integrated.

A later opportunity to visit the maintenance organization in Air Command South-East Asia revealed a parallel set-up and, although the transportation problems were immense and varied greatly from those in the Mediterranean, the ultimate outcome of the operations in that theatre showed this organization once again to be basically sound.

In both Commands there was a small Maintenance Plans Branch on the staff of the Director of Maintenance and Supply comprising experienced engineer and equipment officers whose tasks included the constant review of output and production from base maintenance units; manpower problems; the organization for the supply and maintenance of reinforcement aircraft; the maintenance and supply requirements for forthcoming combined operations (i.e., the assault on Southern France, the re-entry into Greece, Singapore, etc.); the organization of first and second line maintenance supply, repair and salvage behind the Tactical Air Forces; the organization for the repair and salvage of transport aircraft on the normal ferry routes; statistics; the co-ordination of the work of all technical and supply branches, and constant liaison with the operational and administrative planning staffs and Allied Air Forces.

The maintenance support given to the 2nd Tactical Air Force during Operation "Overlord," culminating in the defeat of Germany, was based upon the lessons learnt in the Mediterranean. The results achieved need no elaboration in this paper.

#### THE FUTURE

Such a brief and cursory review of the development of maintenance overseas during the past few years could not possibly bring out all the lessons learned, nor could it reveal the many defects and imperfections which no doubt must have existed in an organization so vast and complex and covering such a wide field of technical and supply activities. Accepting the dictum that in war much wastage is inevitable owing to problems of speedy expansion, untrained personnel, losses by enemy action,



continual movement and changes of location of units, re-arming and re-equipping of squadrons, changes in design and development of existing equipment, transportation difficulties and so forth, it is felt that training in the future could well be based upon the lessons of the late war.

The design and structure of any maintenance organization overseas at the present time is naturally dependent upon available manpower and the nature of the air forces to be supported, and therefore the consideration of an organization such as that in the Mediterranean would be out of the question. The problem that presents itself now is how to keep that flame alight ready for a future crisis by constant training of all branches in the principles which have proved themselves correct during the past few years, and at the same time supporting a much depleted Air Force with static maintenance organizations on the lines of the 1935 set-up.

With conditions in Europe, Palestine, India and elsewhere as they are to-day, the Royal Air Force must be prepared to reinforce any part of the Empire or occupied territory at short notice; but as the present manpower, financial and economic considerations may restrict the transfer from one theatre to another to but a few squadrons to "show the flag" and quell local disturbances, then maintenance methods must be developed and adapted to cater for such contingencies.

At the same time study must continue of ways and means to expand this limited and restricted organization to cater for full-scale mobilization should another disaster overtake the World again in the future. Clearly then, two tasks lie ahead:—

- (a) Maintenance of garrison Air Forces throughout the Empire and occupied territories with plans for the rapid, though perhaps limited, reinforcement of certain areas to "show the flag" or to create a preponderance of Air Power to deal with local emergencies.
- (b) The rapid development of overseas maintenance organizations and alternate air lines of communication to compete with large-scale air reinforcements and supply by air in the event of a major crisis.

The first could be achieved by "pre-stocking" vulnerable areas now with explosives, petrol, oxygen, essential mechanical transport, common-user spares, ground servicing equipment, accommodation stores, telephones, landline and full flying control facilities, khaki drill clothing, long-range drop tanks for fighters and fighter-bombers, and so on, while at the same time preparing plans to air-lift squadron ground servicing echelons together with tool kits, essential ground servicing equipment, and specific-to-type maintenance spares in transport aircraft.

Additional arrangements should also be made for the supply of fully operational and tropicalized replacements aircraft and trained aircrews, also follow-up packs of maintenance spares and additional technical personnel to cater for third and fourth echelon maintenance. On long reinforcement air routes, staging post facilities will be necessary for refuelling, limited maintenance, daily inspections, accommodation for pilots and other air-transportable personnel, and meteorological information. With such additional stores and men provided in advance, the Command being reinforced should be capable of operating and maintaining a small number of reinforcing squadrons for unlimited periods.

Owing to the large numbers of additional trained technicians that would be required, the second task could only be undertaken after general mobilization or at the manpower and material expense of the maintenance organization in the United



Kingdom if anything comparable with the Mediterranean or A.C.S.E.A. set-ups were to be achieved.

#### STUDY AND TRAINING

Once reinforcing plans had been decided upon and were firm, periodic exchanges of qualified officers should be made between the Commands concerned in order to keep abreast with developments, to interchange information on aircraft performances, modifications, airfield facilities, meteorology, politics and intelligence, repair facilities, communications, transportation, changes in Command organization, the Army and other Allied forces in the theatre, and so on.

Although financial and manpower restrictions may at present make it prohibitive, it is felt that an independent school or special arm of the existing School of Air Support might be formed later on to which selected officers from all the maintenance branches of the Royal Air Force could be sent for short courses to study the broader principles of this sphere of Air Force activity. In addition, these courses should be open to Army formations such as the R.A.S.C., R.E.M.E., Air Formation Signals, Royal Engineers, R.A.O.C., and, if possible, representatives from the U.S. and Dominion Air Forces and the Fleet Air Arm with whom we have become so closely associated during the past few years.

Courses of about four weeks duration should enable a comprehensive and extensive syllabus to be covered and would help to inculcate a common doctrine and field of thought, and would ultimately result in a closer understanding between all branches in the vast problems involved. The syllabus might include R.A.F. maintenance organization in the United Kingdom and overseas; mobilization and reinforcement schemes; logistics; administrative planning; Army maintenance in the field; movement and transportation; economics; supply by air; beachhead maintenance; airfield construction; combined operations; the development of an overseas base; and the role, support and development of Tactical Air Forces.

#### CONCLUSION

The aim of this paper is to keep alive the many lessons learned and valuable experiences gained in this sphere of Air Force activity during the late war and to promote study and thought for the future.

While the design and development of aircraft are for ever changing, the principles of war, and of air power in particular, will remain unaltered for many years to come, and it is only by constant study and close and loyal co-operation between all branches that the Royal Air Force can be kept at a state of preparedness and perfection to make it perhaps our strongest weapon for the maintenance of peace.



## RIFLING IN SMALL ARMS

By MAJOR R. S. BROWN, D.S.O.

**I**N his recently published book, *The Englishman and the Rifle*,<sup>1</sup> Lord Cottesloe raises the question why do we, the French and the Norwegians have rifles with left-hand rifling, and practically all other rifles have right-hand rifling.

The *Text-book of Small Arms*, 1929, says it was adopted to counteract the deviation due to the rotation of the Earth in the Northern Hemisphere but, oddly enough, fails to mention that this deviation ceases to exist when firing East or West, and is negligible at any range possible to a rifle.

Lord Cottesloe states, page 135, that this is the reason given by the Committee of 1888 for adopting left-hand twist. The Committee of 1888 doubtless did their best, but it was not a successful best. Certainly they adopted the Lee mechanism, but they "improved" it until it was inferior in many respects to the original Lee. In fact the rifle had to be re-designed, and the Mark II of 1892 was really an entirely new rifle. They adopted a rifling highly successful in comparatively large bores with lead bullets, which when scaled down to .303 was much too delicate for use with jacketed bullets at far higher velocities. They seem, too, to have been unduly influenced by Dalton's calculation which appeared in the R.U.S.I. Journal, Vol. 30, 1886-7, pages 789-794, which applied only to one particular range at Wimbledon and a hypothetical time of flight for the bullet.

Anyway, the statement appears in the *Text-book* without any qualification or explanation, and naturally Australians ask whether their rifles should not be made with a right-hand twist for use in the Southern Hemisphere.

It is the more surprising that it should be found in the *Text-book* since Walker, in 1865, had pointed out in his book, *The Rifle*, that this deviation was negligible, while drift, due to the rotation of the bullet, was not. Using right-hand rifling, the bullet drifts to the right; with left-hand it drifts to the left. Since comparatively few soldiers ever acquire the perfect "let-off," and the tendency in rapid fire is always towards "pulling" rather than "pressing" the trigger, the result being a tendency to shoot to the right, left-handed rifling, which causes drift to the left, can be used as a rough compensation. It has been used in this way for many years. Morse used it in 1858. (Do not believe the story on page 206 of the *Text-book*; it is absolutely untrue.) It was used in the Frank Wesson and Allen & Wheelock rifles, and to-day all Colt pistols have it. In 1866 the French adopted it for the Chassepôt. This weapon had a very long dragging pull and a heavy drift, so left-hand rifling was adopted to balance one against the other.

It seems so obvious that one begins to wonder why *all* military rifles are not made with left-hand rifling. The answer is "custom": grandfather used right-hand rifling; so did *his* grandfather.

But there must originally have been some sort of reason for starting this custom of right-hand rifling. Let me say here that I do not believe the Ancients saw any similarity between a round ball and an arrow or spear—and anyway any spin one could get on a spear wouldn't be nearly enough to keep it point foremost—while the Australian aborigines, who invented the boomerang and the Woomera, which gives a spear greater range, velocity and accuracy than any other hand-thrown weapon, *do not* spin their spears. Spin on an arrow is a measure of the drag on the rear-end to

<sup>1</sup> Published by Herbert Jenkins, 12/6.



keep it going point first. Nobody tried to spin a stone when he threw it. Spinning a ball in games is a XIXth Century trick.

To return to our subject : if we examine the tools used for rifling barrels from the earliest times until comparatively recently we get a curious result. The method of guiding the cutter to form the groove was to twist a red-hot strip or bar of iron. Having got it twisted to a satisfactory degree, a plate was fitted so that the bar would slide through it, twisting as it was moved backwards and forwards. When one groove was cut to the required depth, the guide-plate or the barrel was revolved through a predetermined distance and another groove cut, and so on until the rifling was completed.

Now if you have a bar of red-hot iron fixed at one end, and you are twisting it by a cross-handle fixed on the other, the natural tendency is to twist it in the direction in which we move the hands of a clock to put it forward ; the right hand naturally takes the upper end of the cross-handle and twists it to the right and downwards. But a rod twisted this way, when moved backwards and forwards through the fixed plate, will cut a *left-hand* rifling.

Looking recently at some mediæval ironwork, of which the main framework was square iron bars twisted with beautiful regularity, I noticed that it was all twisted so that it would have guided a cutter to cut left-hand rifling. A few days ago, passing the Natural History Museum, I noticed that the framework of the ornamental iron gates is twisted the same way.

Another method of rifling was by using a grooved wooden cylinder to guide the cutter. The groove was marked out on the cylinder by wrapping a string round it, and was then cut out with a chisel or gouge. Again one would find it easier to prepare it to cut a left-hand twist.

So it looks as if originally there must have been some object to be attained by going to the extra trouble required to cut right-hand rifling. We can only guess at this object, and this is my guess.

Obviously in very early times it was discovered that a tight-fitting ball flew straighter than a loose-fitting one, but was much more difficult to ram down when the barrel was foul. Hence the next step : straight grooves—the lands to guide the bullet, the grooves to hold the fouling. But it was still difficult to ram down the ball. And here we come to what I believe to be the origin of the right-hand twist : anybody trying to get any sort of plug into a hole in which it fits tightly, such as a tight cork into a bottle, will try to screw it in right-handed. But a bullet cannot be screwed into straight grooves, and so I suggest that somebody cut his grooves with a right-hand twist, with some vague idea that it would help the ball to enter and even perhaps help it to go down the barrel. Having thus almost accidentally produced a barrel which shot better than its competitors, it naturally was copied in all its details, including right-hand twist. The original idea which led to right-hand twist was forgotten, and right-hand rifling became customary.

Until elongated bullets were fired from rifles with comparatively rapid twist and at longer ranges, the drift was not noticeable, and when its effect was at last noticed the French were the first to utilize it in a military rifle.

The inertia of "custom" is still a tremendous force in the gunmaking world : ramrods persisted as "cleaning rods" and "clearing rods" for many years ; the "pistol-grip" of our Service rifle is useless as an aid to holding the rifle, but is a reproduction in wood of the loop of the lever of the Martini, its predecessor ; until



recently our rifles had "long-range" sights, graduated for distances at which no one could hope to hit anything smaller than a brigade in a formation obsolescent in the 1870's, because the defence of Plevna in 1877 started a fashion in such sights.

As an example of how soon the original purpose of a piece of gun mechanism is forgotten, take our present Service rifle. It has a half-cock notch in the cocking piece and a stud in the camway at the back of the bolt. Its purpose was to lock the bolt when the rifle was carried at half-cock. It became unnecessary when the safety-catch was added. To-day it is taught that it is a device to prevent the rifle being fired if the bolt is not properly closed.

A still stranger example is to be found in the official Text-book. The 1904 and 1909 editions say that the barrels of Mauser rifles are made with steps instead of the conventional taper, "probably to break up vibrations." The 1929 Text-book leaves out the "probably." But Mauser's patent, No. 5583 of 1890, gives the real reason, which is "to permit the free lengthening of the barrel when heated by rapid fire."

After these examples it is easy to see how soon the original purpose of right-hand rifling, if it really had a purpose, passed out of knowledge, and right-hand rifling became a convention.

Let us hope that the next edition of the Text-book will omit the "deviation due to the rotation of the Earth" and give the true explanation that drift, with left-hand rifling, forms a rough compensation for bad "let-off," and that left-hand rifling is, shall we say, sensible, while right-hand rifling is just conventional.



## WHAT TO READ—II<sup>1</sup>

**A**s explained in the first of these articles, it is not possible in the space available to attempt anything in the nature of a complete bibliography of the various subjects; the object is to suggest worthwhile literature from which the student can make his own selection. Should he need further guidance, he is invited to write to the Librarian outlining his needs, and all possible assistance will be given him.

This article will deal with literature relating to:—

Strategy:—

Grand

Operational

Combined Operations:—

General and Historical

Technique

Major Wars and Campaigns.

### STRATEGY

#### GRAND STRATEGY

- Statesmen and Sea Power—Richmond (1946).  
Armament and History—Fuller (1946).  
British Security—R.I.I.A., Chatham House (1946).  
The Principles of War—Sun Tzu (1944).  
The Congress of Vienna—Nicholson (1941).  
British Strategy, Military and Economic—Richmond (1941).  
The Strategy of Raw Materials—Emeny (1937).  
The Nation at War—Ludendorff (1936).  
Germany Prepares for War—Banse (1934).  
War Memories—Lloyd George (1933-34).  
The Dragon's Teeth—Fuller (1932).  
The World Crisis—Churchill (1927-31).  
National Policy and Naval Strength—Richmond (1928).  
The Foundations of the Science of War—Fuller (1925).  
The Direction of War—Bird (1925).  
The Diplomacy of Napoleon—Mowat (1924).  
A History of the Art of War in the Middle Ages—Oman (1924).  
On War—Clausewitz (1908).  
Maximes de Guerre—Napoleon (collected by Grouard, 1898).

#### R.U.S.I. Journal

- How Big is a Battlefield—August, 1945.  
Makers of Modern Strategy—November, 1944.  
German Politico-Military Strategy—August, 1941.  
Our War Problems and Policy—November, 1940.  
The Strategy of Colonization—November, 1939.  
British Strategy—August, 1934.

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<sup>1</sup> The first of these articles appeared in the JOURNAL of August, 1946. It dealt with literature relating to International Affairs; Relations with the Dominions, Colonies and India; Imperial Defence; and the Higher Study of War.



Broader Aspects of Naval Strategy (Some French Views)—May, 1932.  
 The Conduct of Modern War—February, 1930.  
 Policy and Strategy—May, 1923.

#### OPERATIONAL STRATEGY

(See also Major Wars in this list)

##### (i) GENERAL

Roots of Strategy—Phillips (1943).  
 The Nature of Modern War—Falls (1941).  
 The Art of Modern Warfare—Foertsch (U.S. trans. 1940).  
 Sea, Land and Air Strategy—Aston (1914).

##### (ii) NAVAL

A Layman's Guide to Naval Strategy—Brodie (1943).  
 Naval Warfare—Cresswell (1941).  
 Sea Power in the Machine Age—Brodie (1941).  
 Sea Power in the Next War—Grenfell (1938).  
 Sea Power in the Modern World—Richmond (1934).  
 Naval Warfare—Richmond (1930).  
 Some Principles of Maritime Strategy—Corbett (1911, 2nd Edn. 1919).  
 Naval Strategy—Mahan (1911).  
 Genius of Naval Warfare (Vol. 1)—Daveluy (1910).  
 War on the Sea—Darrieus (1908).  
 The Influence of Sea Power Upon History—Mahan (1890).

##### (iii) MILITARY

Living Thoughts of Clausewitz—Greene (1945).  
 Art of War on Land—Burne (1944).  
 Makers of Modern Strategy—Earle (1944).  
 Blitzkrieg—Miksche (1941).  
 Modern War—Dening (1937).  
 British Strategy—Maurice (1929).  
 The Principles of Land Defence—Thuiller (1902).  
 Conduct of War—Von der Goltz (1899).

##### (iv) AIR

The Command of the Air—Douhet (1943).  
 Blockade by Air—Spaight (1942).  
 Air Strategy—MacMillan (1941).  
 Air Power and Armies—Slessor (1936).  
 Air Strategy—Golovine (1936).

#### R.U.S.I. Journal

The Strategy of the S.E. Asia Campaign—November, 1946.  
 The Victory in the Pacific—November, 1946.  
 Air, Land and Sea Warfare—February, 1946.  
 Air Attack on Communications—November, 1945.  
 Bomber Command—February, 1944.  
 British War Effort—The Role of Air Power—February, 1943.  
 Naval Strategy in the Baltic—August, 1939.



## COMBINED OPERATIONS

## GENERAL AND HISTORICAL

- Amphibious Warfare and Combined Operations—Keyes (1943).  
 Lessons of Allied Co-operation, Naval, Military and Air (1914-18)—Maurice (1942)  
 The Fight for Gallipoli—Keyes (1942).  
 Amphibious Warfare in British History—Richmond (1941)  
 Letters on Amphibious Wars—Aston (1920).  
 Conjoint Expeditions, or Expeditions which have been carried on jointly by  
 the Fleet and the Army—Molyneux (1759).

*R.U.S.I. Journal*

- Amphibious Operations—November, 1946.  
 Air, Land and Sea Warfare—February, 1946.  
 The Functions of the Royal Marines in Peace and War—February, 1944.  
 Sea, Land and Air Power—February, 1943.  
 Co-operation—August, 1923.  
 Gallipoli Viewed from the Turkish Side—August and November, 1923.  
 The Campaign of Gallipoli (Translation from the German)—February, 1922.  
 Walcheren and Gallipoli—A Comparison—November, 1920.  
 Combined Operations—February, 1920.

## TECHNICAL

- The Royal Marines—Admiralty Account of their Achievements, 1939-43 (1946).  
 Three Assault Landings—Bredin (1946).  
 Operation Neptune—Edwards (1946).  
 U.S. Marines on Iwo Jima—U.S. Infantry Journal (1946).  
 Island Victory—Battle for Kwajalein Atoll—Marshall (U.S.) (1945).  
 Report by the Supreme Commander to the Chiefs of Staff on the Operations in  
 Europe of the Allied Expeditionary Force, 6th June, 1944—8th May, 1945.  
 Report by the Supreme Commander, Mediterranean on the Operations in Southern  
 France, August, 1944.  
 Report by the Supreme Commander, Mediterranean on the Italian Campaign,  
 8th January, 1944—10th May, 1944.  
 The Capture of Attu (Aleutian Islands)—U.S. War Dept. (1944).  
 Combined Operations, 1940-42—Official (1943).

*R.U.S.I. Journal*

- The Navy's Part in the Victory in Europe—February, 1946.  
 Naval Bombardment—August, 1945.  
 The Prefabricated Harbour—August, 1945.  
 Gallipoli and Normandy—February, 1945.  
 The War in the Pacific—February, 1945.  
 The Navy's Part in Combined Operations—February, 1945.  
 The Navy's Part in the North African Campaign—August, 1944.  
 Combined Operations with the Chinese Against Pirates, West River, 1923-25  
 —February, 1939.  
 High Speed Craft for Naval Uses—August, 1931.  
 Weapons Missile and Assault—August, 1931.  
 Monitors in Modern Naval Warfare—February, 1924.  
 The Dwina Campaign—May, 1923.



## MAJOR WARS

## GENERAL (LAND) (UP TO 1870)

History of the British Army—Fortescue.

## WARS OF LOUIS XIV

Masters of Mobile Warfare (Marlborough)—Colby (1943 U.S.A.).

Queen Anne's Navy in the West Indies—Bourne (1939).

Marlborough, His Life and Times—Churchill.

Marlborough and the Rise of the British Army—Atkinson (1921).

Letters and Despatches of John Churchill, Duke of Marlborough—Murray (1845).

## WAR OF THE AUSTRIAN SUCCESSION

Fontenoy and Great Britain's Share in the War of the Austrian Succession—Skrine (1906).

## THE SEVEN YEARS WAR

Masters of Mobile Warfare (Frederick the Great)—Colby (1943 U.S.A.).

Admiral Byng and the Loss of Minorca—Tunstall (1928).

England in the Seven Years War—Corbett (1907).

History of the Seven Years War—Lloyd (1790).

## THE THIRTY YEARS WAR

The Thirty Years War—Wedgwood (1938).

The Thirty Years War—Gardiner (1874).

## WAR OF THE AMERICAN REVOLUTION

The American War of Independence in Perspective—MacMunn (1939).

The American War of Independence—Whitton (1931).

The American Revolution—Trevelyan (1914).

Major Operations of the Navies in the War of American Independence—Mahan (1913).

## NAPOLEONIC WARS

Years of Victory—Bryant (1944).

Masters of Mobile Warfare (Napoleon)—Colby (1943 U.S.A.).

Years of Endurance—Bryant (1942).

History of the Peninsular War—Oman (1902-30).

The Campaign of Trafalgar—Corbett (1910).

Napoleon's European Campaigns 1796-1815—Maycock (1910).

Logs of the Great Sea Fights 1794-1805—Navy Records Society (1900).

How England Saved Europe, 1793-1815—Fitchett (1900).

Influence of Sea Power on the French Revolution—Mahan (1893).

The Naval History of Great Britain from 1793 to 1827—James (1886).

*R.U.S.I. Journal*

Some new aspects of the Battle of Trafalgar—November, 1937.

Napoleon's Counter Blockade (A Comparison with 1940)—November, 1940.

Napoleon and the British Navy—November, 1921.

A Journey to some Peninsular Battlefields—February, 1936.

## CRIMEAN WAR

Russian War 1855 (Black Sea)—Navy Records Society (1945).

Russian War 1855 (Baltic)—Navy Records Society (1944).



- Russian War 1854—Navy Records Society (1943).  
 The Crimea in Perspective—MacMunn (1935).  
 The War in the Crimea—Hamley (1891).  
 The Invasion of the Crimea—Kinglake (1863).

*R.U.S.I. Journal*

- The Navy and the Crimean War—February, 1940.

AMERICAN CIVIL WAR

- Lee, Grant and Sherman—Burne (1938).  
 Grant and Lee—Fuller (1933).  
 Great Britain and the American Civil War—Adams (1925).  
 The American Civil War—Formby (1910).  
 History of the Civil War in the United States—Wood & Edmonds (1905).  
 Official Records of the Union and Confederate Navies in the War of Rebellion  
 —U.S. Navy, Official (1894-1917).  
 The Naval History of the Civil War—Poster (1887).

FRANCO-GERMAN WAR

- Lectures on the Strategy up to Sedan—Bird (1909).  
 Story of the War of 1870-71—Brunker (1908).  
 The War—von Moltke (1891) (Revised translation 1917).

SOUTH AFRICAN WAR

- The Last of the Gentlemen's Wars—Fuller (1937).  
 The Great Boer War—Doyle.  
 With the Naval Brigade in Natal—Burne (1902).  
 Three Years War—de Wet (1902).  
 Naval Brigades in the War—Jeans and others (1901).

RUSSO-JAPANESE WAR

- Rasplata (The Reckoning)—Semenov (English translation, 1909) (Naval narrative).  
 Reports of British Officers attached to the Japanese Forces in the Field—War  
 Office (1908).  
 A Staff Officer's Scrap Book—Hamilton (1905-07).  
 With Togo—Seppings-Wright (1905).

*R.U.S.I. Journal*

- Some Strategical Problems of the First Phase of the War between Russia and  
 Japan—November, 1924.  
 Lesson of Russo-Japanese War—August, 1937.

WAR OF 1914-1918

(i) GENERAL

- The Role of British Strategy in the Great War—Cruttwell (1936).  
 War Memories—Lloyd George (1933-34).  
 The World Crisis—Churchill (1927-31).  
 A History of the Great War—Buchan (1921).  
 The Empire at War—Lucas (1921) (Dominions and Colonies in particular).  
 The War and the European Revolution in relation to History—Trevelyan (1920).

(ii) NAVAL

- Official History of the Great War: Naval Operations (5 vols.).  
 The Riddle of Jutland—Gibson & Harper (1934).



- The Truth about Jutland—Harper (1927).
- The Navy in the Dardanelles Campaign—Wemyss (1924).
- The Merchant Navy—Hurd (1921).
- Germany's High Sea Fleet in the World War—Scheer (1920).
- The Crisis of the Naval War—Jellicoe (1920).
- The Grand Fleet : Its Creation and Work—Jellicoe (1919-20).
- The Dover Patrol—Bacon (1920).

## (iii) MILITARY

- Official History of the War : Military Operations (24 vols.).
- The War on the Italian Front—Villari (1932) (translation).
- The Palestine Campaign—Wavell (1931).
- German Strategy in the Great War—Neame (1923).
- An Outline of the Egyptian and Palestine Campaigns—Bowman-Mainfold (1922).
- Sir D. Haig's Command (19th Dec. 1915-11th Nov. 1919)—Dewar and Boraston (1922) (Reprint 2 vols. in one, 1929).
- With the Russian Army—Knox (1921).
- A Gallipoli Diary—Hamilton (1920).
- My Reminiscences of East Africa—von Lettow-Vorbeck (1920). 1914—French (1919).
- The Story of the Salonica Army—Ward Price (1917).

## (iv) AIR

- Official History of the War : The War in the Air (5 vols.).
- The Zeppelins—Lehman (1928) (Translation).
- The Defence of London, 1915-1918—Rawlinson (1923).
- The German Air Force in the Great War—Neuman (1920) (Translation).
- The Great War in the Air—Middleton (1920).

*R.U.S.I. Journal*

- Passchendaele—February, 1935.
- The Battle of the Marne—November, 1933.
- Verdun and the Somme—February, 1931.
- The Allied Effort in the West (1914-18)—August, 1922.

## WAR OF 1939-1945

## (i) GENERAL

- A Record of the War—Storrs/Graves. Published quarterly and at present covering up to 30th June, 1945.
- War Speeches—Winston Churchill. 7 vols. (at present only vols. 5, 6 and 7 are available).
- The World at War, 1939-1944—U.S. War Department (1945).
- Miniature History of the War—Ensor (1944).
- Biennial Report of the Chief of Staff of the U.S. Army to the Secretary of War, 1st July, 1943-30th June, 1945.
- Report by the Supreme Commander, Mediterranean on the Operations in Southern France, August, 1944.
- Report by the Supreme Commander, Mediterranean on the Italian Campaign, 8th January, 1944-10th May, 1944.
- Report by the Supreme Commander to the Chiefs of Staff on the Operations in Europe of the Allied Expeditionary Force, 6th June, 1944-8th May, 1945.



## (ii) NAVAL

- The British Navies in the Second World War—James (1946).  
 U.S. Navy at War—Official Reports by Fleet Admiral Ernest J. King.  
 Operation Neptune—Edwards (1946).  
 The Portsmouth Letters—James (1946).  
 Ocean Front—The Story of the War in the Pacific, 1941-44—Official (1945).  
 The Mediterranean Fleet—Admiralty (1944).  
 The Battle of the River Plate—Strabolgi (1940).

## (iii) MILITARY

- Normandy to the Baltic—Montgomery (1947).  
 The Campaign in Burma—Official (1946).  
 Strategy in the Second World War—Burne (1946).  
 Spearhead in the West—Official (1945).  
 Middle East 1940-42—Guedalla (1944).  
 Wavell in the Middle East—Rowan-Robinson.  
 Auchinleck to Alexander—Rowan-Robinson.

## (iv) AIR

- Bomber Command—Harris (1947).  
 The R.C.A.F. Overseas—Official (1945).  
 Third Report of the Commanding General of the U.S. Army Air Forces to the Secretary of War—Official (1945).  
 Atlantic Bridge—Air Ministry (1945).  
 Coastal Command leads the Invasion—Wilson & Robinson (1945).  
 R.A.A.F. Saga—Official (1944).  
 Wings Over Burma—Hemingway (1944).  
 The Battle of Britain—Spaight (1941).

*R.U.S.I. Journal*

- The Strategy of the S.E. Asia Campaign—November, 1946.  
 21st (British) Army Group in the Campaign in North-West Europe, 1944-45  
 November, 1945.  
 Air Aspects of the Campaign in Italy and the Balkans—August, 1945.  
 The Campaign in Burma—August, 1943.  
 The War in the Middle East—February, 1943.  
 Operations of the B.E.F. in Belgium and N. France—August, 1940.

## CORRECTIONS

The following corrections should be made to the list of books which appeared in "What to Read" in the JOURNAL for August, 1946:—

Under "Higher Study of War—Conduct"

~~delete~~ Government and War (Bird)

~~add~~ Government and the War (Wilkinson)

Under "Imperial Defence—Principles"

~~delete~~ Imperial Policies—Gwynn

~~add~~ Imperial Policing—Gwynn



## THE R.U.S. MUSEUM

By the SECRETARY

SINCE the foundation of the Institution, a museum has been an important part of its constitution. Originally it contained a heterogeneous collection of exhibits, including sporting trophies and even botanical specimens; but most of these were cleared out as long ago as 1860, and in 1891 a special committee appointed by the Council recommended that it should be "as much a model room of the present as a show of historical antiquities and relics of the past." This policy was consistent with the Royal Charter which ordains that the Institution exists for the promotion and advancement of the science and literature of the Services. Far better effect could be given to it when, by grace of H.M. Queen Victoria, the Institution was granted the use of the Banqueting House and, having built on the new wing, in 1895 moved into the existing premises. Ever since then, there has been a constant flow of gifts and loans until to-day it would be necessary to call a halt but for the fact that the whole contents of the Museum is being systematically reviewed with the object of eliminating some of the older exhibits in order to make room for new ones.

This does not imply that any really valuable models, relics, uniforms, medals or other such historic and irreplaceable articles will be got rid of; but exhibits which are now redundant or of more local interest will, where suitable, be disposed of elsewhere.

Broadly speaking, the Museum to-day is divided into two parts—the Ancient in the Banqueting Hall, and the Modern in the Crypt. The former may be regarded as giving expression more particularly to the literary side of the Institution's activities and the latter to the scientific side. But there is no hard-and-fast dividing line; for example, the progress of warship construction can be traced through the days of sail in the models in the Banqueting Hall and from the introduction of steam onwards in those in the Crypt; while relics and personal mementoes of the 1914-18 and 1939-45 wars in the Crypt continue the historical associations of earlier wars in the Hall above.

It is sometimes suggested that, in view of the severe limitations of space, more spacious quarters ought to be found for this great Three Services' Museum; but, however desirable that might be in theory, it would be impracticable without uprooting the whole Institution from its present site to one where it would be far less convenient to Members and the Services generally, and where the Museum would be less accessible to the public. Moreover, it would unbalance the whole constitution of the Institution if its resources were devoted to providing a huge, comprehensive Museum for each Service, such as the National Maritime Museum is for the Royal Navy and Merchant Navy, or one which would cover every war and campaign as fully as the Imperial War Museum does the last two great wars.<sup>1</sup>

By very careful selection of new exhibits and by displaying the whole collection to best advantage, the R.U.S. Museum can and does give effect to the Institution's particular mission, while for the general public it is indeed *multum in parvo*—enough to whet the appetite for more knowledge of the Services and their history, yet not so much as to produce mental indigestion. Indeed, it is this compactness, coupled with accessibility, which makes it the great asset to national interest and education that it is.

The Museum has weathered the War safely and is now fully open except for one end of the Banqueting Hall, where scaffolding has been erected by the Ministry

<sup>1</sup> The present writer was once asked what were to be the relations of the R.U.S. Museum to the newly opened National Maritime Museum; he replied "Those of Abraham to the seed of Abraham!"



of Works for replacing the Rubens ceiling. A large proportion of the exhibits formerly in the Hall are back in place. The Crypt has been brought right up to date.

It is hoped that the foregoing will assist Members to answer enquiries about the constitution and objects of the Institution's Museum. A complete list of new acquisitions is published each quarter in the Secretary's Notes; but it is hoped to make this short article a regular feature of the JOURNAL, whenever space permits, so as to provide fuller information about new activities and important additions.

#### NEW EXHIBITS

The following are a few of the specially interesting additions received during the past quarter:—

1. The Admiral's Flag worn by H.M.S. "Iron Duke" and hauled down on 29th November, 1916, when Sir John Jellicoe relinquished command of the Grand Fleet to become First Sea Lord. Until recently it hung over his tomb in the crypt of St. Paul's. It has been transferred permanently to the Museum by arrangement with the Cathedral authorities and with the concurrence of the Viscount Jellicoe and the Dowager Countess.

It has been hung over the large bust of Nelson which stands on the stump of the "Victory's" mast facing the model of the battle of Trafalgar. Immediately beneath, to one side, is a Vice-Admiral's Flag—that flown by Sir Bertram Ramsay at Dover; on the other is a Rear-Admiral's Flag, flown by Sir Cecil Harcourt at the surrender of Hong Kong.

2. A photographic copy of the Instrument of Surrender of 784,400 soldiers, sailors and airmen of the Japanese Expeditionary Force under Field Marshal Count Terauchi to the Supreme Allied Commander, South East Asia—Admiral Lord Louis Mountbatten. Also one of the pens used by the Supreme Allied Commander to sign the Instrument of Surrender.

Presented by Admiral the Viscount Mountbatten of Burma, G.C.V.O., K.C.B., D.S.O., A.D.C.

3. A mounted collection of the signs worn on vehicles of the various formations under the command of G.H.Q. Middle East between September 1939 and August 1945.

Presented by Major-General L. O. Lyne, C.B., D.S.O., as Director of Staff Duties, War Office. (The Staff Duties branch of G.H.Q. Middle East were responsible for all matters concerning these signs in the Middle East.)

4. The watch worn by Flight Lieutenant D. E. Hornell when he depth-charged and sank a U-boat on 24th June, 1944. The U-boat was sighted on the surface travelling at speed in the Faroes area. In the face of intense A.A. fire he brought his Canoe P/102 down to a low altitude and released depth charges in a perfect straddle, sinking the submarine. An engine fell off the flying boat and it had to be brought down in a heavy swell. Only one dinghy was serviceable and the crew had to take turns in the water for 24 hours before they were rescued. By that time Flight Lieutenant Hornell was blind and exhausted and died soon afterwards. He was awarded a posthumous V.C.

Presented by the Air Ministry, who received it from his widow.

5. A model of a boiler room in H.M.S. "King George V." Scale:  $\frac{1}{2}$  in. = 1 ft. Presented by the Admiralty.

6. Queen's South African Medal with clasps for Talana and Relief of Ladysmith of Corporal J. Cathcart, Royal Dublin Fusiliers. This has been presented by Corporal Cathcart's brother—Pensioner J. Cathcart of the same Regiment, who has been serving as a temporary Attendant in the Museum for nearly three years.



## THE POLITICAL STRATEGY OF RUSSIA

By LIEUT.-COLONEL J. V. DAVIDSON-HOUSTON, M.B.E.

**S**INCE policy and strategy are influenced by geography, an analysis of Soviet military aims must start from an examination of historical and physical factors.

The first thing to remember is that the history of the Tsarist and Soviet Empires is the history of the *Russians*. Despite the diversity of races in the U.S.S.R., about 90 per cent. are of Slav origin, including 75 per cent. pure Russian, and it is the Russians who have built up and are maintaining the Union. In the Middle Ages the Russians were divided into a number of small principalities, subject to oppression by the more organized Finns and Teutons from the West and the powerful Tartar hordes from the East. Consistently hemmed in by enemies, the Russian struggle for survival developed along the lines, firstly of unification, and then of expansion wherever the ring weakened.

### EXPANSION

Russian expansion may be said to date from 1482, when Ivan III, Prince of Muscovy, was proclaimed Tsar of all the Russias. The next stage was to clear the foreign invaders from the Russian forests. The nations of Europe were at this time too powerful for the Muscovites to achieve much success in that direction, but the Tartar kingdoms, weakened by dissensions, began to yield to the new-found Russian nationalism. Expansion was thus eastward rather than westward and, in the absence of any strong political opposition, was conditioned largely by geographical factors. The map of Russia, both in Europe and Asia, shows a number of great rivers flowing generally North and South and connected by the valleys of their tributaries, themselves navigable in many cases. Following these waterways, the pioneers found furs, gold, agricultural land and freedom, which gave impetus to their movement. In 1558 they flowed over into Siberia; the Urals are no obstacle, and Siberia, with its forests, steppe, great rivers and sparse native population, came as naturally to the Russians as America to the colonists of Western Europe.

In less than a hundred years, that is by 1638, the Russians reached the Pacific. Here they experienced their first politico-military check, for the Manchu rulers of China were strong enough to resist them, and by the Treaty of Nerchinsk (1689) the Russians agreed to halt on the line of the Argun River, some hundreds of miles West of the Pacific coast. The reaction to firm opposition is interesting: they withdrew their forces and changed direction, moving North-East into the Samoyed country and Kamchatka. They also reached the Behring Sea and crossed into Alaska, which remained a Russian colony until, just before gold was discovered, the Americans in 1867 induced them to sell it for a modest sum.

It is important to observe that a military change of front did not end attempts at peaceful penetration, for the Russians, by means of trade, diplomatic and Christian missions, succeeded in establishing themselves in Peking ahead of the other Powers.

The next expansion was in the Caucasus, where Peter the Great encouraged penetration into the fertile and mineral-bearing territories of the Turkish and Persian Empires. With the acquisition of a great part of the Black Sea shore, Russia began to cast her eyes in the direction of Constantinople, affording an outlet from her enclosed waters; but when at last a severe check to these ambitions was administered by Britain and France in the Crimea, the Caucasus assumed even greater importance as a means of outflanking Turkey.



During the XIXth Century expansion also took place into the Persian and Chinese dominions East of the Caspian, where Russian exploitation of cotton and minerals was threatened by the raids of lawless tribes upon the trade routes. The weakness of the suzerain Powers thus eventually led to Russification of a great part of Turkestan.

In the latter half of the Century the Russians, having reached the Afghan frontier, attracted such attention from the British and Indian Governments that once again they found it politic to halt. The growing weakness of China, however, had enabled them to resume their interrupted progress in the Far East, and in 1860 they had established the port of Vladivostok. In 1898 they leased from China Port Arthur and Talien-Wan (Dalny)—their first ice-free ocean ports, and by 1903 the Trans-Siberian Railway had joined European Russia to the Pacific coast. This railway, the shorter branch of which passed through Manchuria, gave them communications to protect and country to exploit, so that they began to consolidate their military and economic hold over that territory until checked by Japan's victory in the War of 1904-05.

Disillusion and revolution now halted Russia's ambitions in Europe and the Far East, and she turned to those of her neighbours, particularly Outer Mongolia and Sinkiang, where there was little opposition to the extension of her influence. This led to great developments in Soviet Central Asia: the Turksib Railway, joining the Trans-Siberian system to the frontier of Turkestan; air-bases and air-lines along the whole of the southern border; the industrialization and exploitation of backward agricultural lands.

### OBJECTIVES

With the foregoing in mind, we may seek for motives, and three can readily be distinguished:—

- (a) Security;
- (b) Economics;
- (c) Imperialism.

#### *Security*

Russia, without a satisfactory natural frontier, such as the sea, has constantly sought to deny her potential enemies bases from which to attack her, and conversely to control territory which would give her offensive advantages in any future war. At present many of her resources, such as oil, coal, iron and the newly-developed Asiatic industries, are near the frontier; while the Trans-Siberian and Turkestan railways run close to it for practically the whole of their lengths. The increasing range of modern weapons thus makes it inevitable that the U.S.S.R. should wish to control territories farther and farther away from its centres of population and industry, and it is hard to see any limit to such a desire.

The Russians have from time to time achieved this control either by occupying a buffer State (e.g., Poland, Moldavia, North Korea), by setting up puppet or Communist governments (Yugoslavia, Outer Mongolia), by frightening neighbours into friendship (Rumania, Persia), or by ethnic exploitation. This last method is facilitated by the fact that practically all along the frontiers the populations on either side are of the same stock. The Russian has always been a good assimilator, without racial or colour prejudices, and his success at Russification, coupled with geographical contiguity, has made the population of the Soviet Union far more homogeneous than that of the British Empire. Moreover, as already stated, the Russians form about



75 per cent. of the total population of their country, as against some 15 per cent. of whites among the subjects of the King-Emperor. If people on the far side of the Soviet frontier can be brought to think the same way as their brethren on the near side, an offensive-defensive zone is formed (as among the Ukrainians in Poland); conversely, the fear that Soviet peoples may be unduly influenced by their kinsmen over the border may encourage Moscow to seek more positive methods of control over them.

#### *Economic motives*

The protection of trade routes has in the past led the Russians to military occupation in order to protect them, as in Central Asia and Manchuria. Their present system of State trading also encourages them to dominate the economy of neighbouring lands so as to operate to their advantage. This system can at present be seen in action in Hungary and the Balkan countries.

The acquisition of ice-free ports has also long been an objective, in order to provide outlets to the oceans of the world. Her geographical position has thus directed Russia's eyes to the southern Baltic, to the Straits, to the Persian Gulf, to the Indian and Pacific oceans.

Two claims which could not well be sustained in the case of Russia are the need for living space and for raw materials. The U.S.S.R. is rich in unexploited resources of all kinds, while it may be remarked that out of a total Soviet population of 190,000,000, only about 30,000,000 live in the vast Asiatic territories. Another factor of current interest which, although partly political and partly military, has probably an economic basis, is the maintenance abroad of relatively large occupation forces. These are less of an economic burden than they would be in the home country, while their too sudden repatriation might hinder recovery and embarrass a Government which has long told its people of the superior conditions enjoyed within the U.S.S.R.

#### *Imperialism*

Though the substitution of the title "Soviet Union" was intended to abolish the imperialism of the Tsars with a stroke of the pen, the incentive to absorb poorly-developed and troublesome neighbours operates to a greater or less degree in every great nation. In the case of the U.S.S.R., it is also a matter of prestige: the Soviet Union does not want to occupy an area smaller than the Tsar's dominions, and in late years has turned its attention to territories lost during the Revolution (e.g., Basarabia, Kars).

### THE DANGER AREAS

The above factors, coupled with Russian ignorance of the outside world and Moscow's not ill-founded opinion that there are hostile elements in the counsels of many foreign States, are likely to involve clashes of interests with other Powers. These differences have been and are being well ventilated as far as European questions are concerned, and many are on the way to being reconciled. The chief danger lies in Asia, where the advantages conferred on Russia by geographical and political factors may result in the other Allies being faced with a series of *faits accomplis*. It is therefore advisable to survey the Asiatic frontiers of the U.S.S.R. and consider what problems are likely to arise there.

#### MANCHURIA, KOREA AND MONGOLIA

The present frontier of Manchuria is a riverine one, and has the advantage that the population on one side is overwhelmingly Russian and on the other overwhelmingly Chinese. The Amur and Ussuri rivers, however, are navigable trade routes and



not natural barriers. The Russians are interested in the soya crops, coal and other unexploited minerals, as well as in the ice-free ports of Port Arthur, Dalny and Newchwang. The railways to these ports and to Vladivostok run through Manchuria. Following on Japan's defeat in 1945, Russia acquired from China certain naval and military rights in Port Arthur and Dalny, but agreed to withdraw her troops from the rest of the country. Reoccupation by Chinese Central Government forces with American assistance has, however, been hampered by Chinese Communist bands left behind.

Russia is interested in Korea because it rounds off her eastern seaboard and could form a defensive flank to her Far Eastern possessions. Again, Korea has warm-water ports, Seishin and Rashin, which were developed by the Japanese shortly before the War. The Koreans, first under Chinese and then under Japanese suzerainty, have remained politically undeveloped, and the present artificial division into northern (Russian) and southern (American) occupation zones has led to the growth of rival political parties sponsored by these two Powers.

The population of the Buryat Soviet Republic are akin to the people of Outer Mongolia which, owing to the weakness of the suzerain (China), has since 1921 become an "independent People's Republic" on Soviet lines and with Soviet military advisers and backing. Mongolia is rich in cattle and sheep, and many unexploited minerals; it also forms a protective zone to the Trans-Siberian railway. While access from Chinese territory has been denied for the last twenty-five years, communications with the U.S.S.R. have been well developed. A railway now links the Trans-Siberian system with Urga (Ulan-Bator)—the capital—and there is a motorable trade route right across the country to the border of North China. Soviet ascendancy in Outer Mongolia, and the disappearance of the Japanese counterweight, are bound to influence the weakly-organized tribes of Inner Mongolia who resent the long-continued infiltration of Chinese cultivators from the South. Moreover, now that Chinese Communist troops have established themselves in Inner Mongolia, the pro-Russian sphere, with skilful handling, may be extended right down to the Great Wall.

#### TANNU TUVA AND SINKIANG (CHINESE TURKESTAN)

Tannu Tuva is a small, mountainous country about one-third the size of Germany, with a native population akin to the Soviet Buryats. Its interest to Russia lies in its livestock and furs, and in its central position with regard to Mongolia, Soviet Central Asia and Chinese Turkestan. Colonization has proceeded over several decades, until Russians are now believed to form a majority of the population. Its only links with the outer world are through the U.S.S.R.—by air or along the valley of the Yenisei. Tannu Tuva, which became an "independent republic" on Outer Mongolian lines, has since been quietly absorbed into the Soviet Union.

The extensive province of Sinkiang is of importance as a market for manufactures and a source of livestock and of minerals not yet fully exploited. It is of interest to India, whose merchants have for many generations carried on trade through Chitral and Kashgar. Although under Chinese suzerainty, its population is mainly Turkoman and akin to the inhabitants on the Soviet side of the frontier. Its remoteness from the heart of China contrasts with the relatively short air and road links with the Turksib railway system. During the past seventy years Russia, in addition to her trade influence, has from time to time taken advantage of local disorders to send in troops, and during the XIXth Century detached the Balkhash-Issik Kul region from the Chinese Empire.



## AFGHANISTAN, PERSIA AND TURKEY

Russian interests in Afghanistan have hitherto been mainly strategic, since the country is not only a buffer between herself and India, but also outflanks Persia. The political frontier is a weak one, since the Tajiks and Uzbeks of northern Afghanistan are related to the inhabitants of Soviet Tajikistan and Uzbekistan. The true ethnic frontier is the Hindu Kush, running through the middle of the kingdom. Two main lines of communication with the Turksib have been developed—one a branch railway to Termez on the frontier, and thence by road to Kabul; the other a road from Kushk railhead to Herat, which is a centre of communication with Persia, India and Baluchistan. Recently there have been signs that the Russians are interesting themselves in the unexploited minerals, particularly oil. It is obvious that a British military withdrawal from India, or failure to support Afghanistan from the Foreign Office as well as from Delhi, would weaken the country's ability to resist Soviet pressure of any kind.

Russia's main interests in Persia are grain, which is concentrated in the northern provinces; oil, which is awaiting exploitation in Azerbaijan; and the warm waters of the Persian Gulf, which can now be reached by the trans-Persian railway. There are also East-West road approaches to Afghanistan and India. Ethnically, the true Persian (Irani) inhabits only the centre of the country; in the North are Turkomans, Azerbaijani and Armenians, with corresponding national republics on the Soviet side of the border. Communications with the U.S.S.R. through Tabriz, Meshed and across the Caspian are also well developed. The Soviet occupation forces have in addition encouraged Kurdish nationalism, with possible repercussions among the Kurdish communities of Iraq and Turkey.

The *Tudeh* party, on Communist lines, has been set up as a pro-Russian element in Persian politics, and has organized labour troubles to embarrass the Anglo-Iranian Oil Company in the South. Azerbaijan, whose oil and grain gives her a powerful hold on the economy of the whole country, was lately in the hands of a pro-Soviet local government which challenged the authority of Teheran. The withdrawal of our troops has left Persia and our oil interests without a balancing force to Russian pressure, even though the Soviet formations have themselves withdrawn across the frontier.

Russia's main interests in Turkey have long been the control of the Black Sea coast and of exits to the Mediterranean, especially the Straits. Her failures to secure direct access have given rise to outflanking movements such as the encouragement of Bulgarian troop concentrations towards Thrace, the support of Yugoslav ascendancy at Trieste, and claims to slices of Turkish Caucasian territory inhabited by people akin to the Soviet Georgians and Armenians.

## CONCLUSIONS

We are thus led to conclude that Russia's frontiers in Asia have neither ethnic nor physical limits, and that she tends continually to expand, owing partly to her exaggerated ideas of security and partly to lack of resistance. In this expansion she is assisted by her ethnic and geographical advantages, and by her use of Communism (as Islam was once used) to popularize her rule and to weaken or embarrass her opponents. The first tendency can be remedied only by overcoming her suspicions and inducing her to trust in collective security; and the second by the United Nations paying more attention to the situation of the weak countries bordering the U.S.S.R. in Asia, and affording them that support without which they cannot resist encroachments on their sovereignty.



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## THE INTERNATIONAL SITUATION

### TREATIES OF PEACE WITH ITALY, ROUMANIA, BULGARIA, HUNGARY AND FINLAND

**T**HE General Assembly of the United Nations Organization opened at Flushing Meadow, New York, on 23rd October. The leader of the United Kingdom delegates was the Foreign Secretary—Mr. Bevin. Field-Marshal Smuts represented South Africa. Australia, Canada, New Zealand and India also sent delegates. M. Molotov continued to be the principal representative of the Soviet Union.

The Meeting opened with a speech by the President of the United States—Mr. Truman. In the course of this he emphasized that two of the most urgent tasks were to establish international controls of atomic energy so that it could be used only for peaceful purposes . . . and to reach similar agreements to "remove the deadly fear of other weapons of mass destruction."

The Assembly discussed a variety of subjects, and progress was not accelerated by some of the smaller Powers taking the opportunity to air their pet grievances, whether really germane to the Charter or not; while the Soviet delegates continued to play their part of chief obstructionists, in which they were faithfully supported by Poland and the Ukraine. But the opportunity was taken to continue the meetings of the Council of Foreign Ministers (representing Great Britain, the United States, the Soviet Union and France) which had been interrupted in Paris to enable them to go to New York: These were devoted, from 3rd November to 12th December, to drafting the final peace treaties with Italy, Roumania, Bulgaria, Hungary and Finland.

At first progress was slow and it looked as if finality would never be reached; but at last M. Molotov became more co-operative and in the end complete agreement was reached on all controversial matters, chief among which had been Trieste, Venezia Giulia, Danube navigation and reparations.

The text of these Treaties was published in a Blue Book<sup>1</sup> in preparation for their signature in Paris on 10th February, 1947.

### GERMAN AND AUSTRIAN TREATIES

The Foreign Ministers' Council agreed to hold their next meeting in Moscow on 10th February, 1947, for the commencement of discussions on the German and Austrian Treaties.

### ALBANIA'S "DELIBERATELY HOSTILE ACT"

On 22nd October, 1946, H.M. destroyers "Saumarez," Captain W. H. Selby, and "Volage," Commander R. T. Paul, were seriously damaged by mines in the channel between Corfu and the mainland of Albania. The "Saumarez" was struck first, and immediately began settling down by the bow, with oil fuel burning forward. The "Volage" took her in tow stern first, but she also struck a mine 1½ hours later. Both vessels were towed into Corfu next morning. Forty-four officers and men lost their lives, and about the same number were injured.

<sup>1</sup> H.M. Stationery Office, Cmd. 7022. Price 2s. 6d.



On 23rd October, the Parliamentary Secretary of the Admiralty stated in the House of Commons that at the time both ships were in the very centre of the swept channel, which was one mile wide. Their position at the time was about  $1\frac{1}{2}$  miles from the Albanian coast. The channel had been searched by British minesweepers periodically from October, 1944, to February, 1945, and no mines were found. Since that time the channel had been in use by naval vessels of various sizes and had also been open to merchant ships.

On 27th October, an official statement by the Commander-in-Chief, Mediterranean Fleet—Admiral Sir Algernon Willis, showed that when the accident occurred, the cruisers "Mauritius" and "Leander," with the "Saumarez" and "Volage," were proceeding by the North Corfu Channel to carry out exercises with H.M.S. "Ocean." Shore batteries were clearly seen with men in their immediate vicinity, but no hostile action was taken by them. While the damaged ships were endeavouring to extricate themselves, a boat flying the Albanian ensign and a white flag came alongside the "Volage" and asked what the ships were doing. Apart from this no action was taken by the local authorities.

On 30th October, it was announced that General Enver Hodja, the Albanian Prime Minister, had sent a message to the Secretary-General of the United Nations protesting against what he called "unauthorized penetration of British warships into Albanian waters," and demanding an intervention from the Secretary-General to put an end to such provocations.

On 13th November, minesweepers of the Royal Navy, acting under international authority, swept 22 moored mines in the Corfu Channel, two of which were recovered and taken to Malta for expert examination. Other mines were sunk by rifle fire. On the same day General Hodja cabled another protest to the Secretary-General of the United Nations against Britain's "dictatorial act" in deciding to sweep mines in the channel, and asked for the establishment of a commission to determine the extent of non-territorial waters there. His telegram alleged that up to 23 British warships had entered Albanian waters under the pretext of clearing mines, and that they had fired machine-gun salvos into the air or into the water to create incidents.

On 21st November, the Admiralty stated that it had been established that the 22 mines swept in the North Corfu Channel were of German manufacture.

On 10th December, it was announced that, after a thorough examination of all the evidence, the British Government had despatched an emphatic Note to the Albanian Government. (The text was published in the Press on 11th December.) The Note demanded reparation from Albania for the damage suffered by the British destroyers, and full compensation for the relatives of the 44 officers and seamen who lost their lives. It accused Albania of a "deliberately hostile act" in laying the mines, or allowing them to be laid, and added that if no satisfaction was received within 14 days the matter would be brought before the Security Council of the United Nations as a serious threat to, and a breach of, international peace and security.

On 24th December, a reply to the Note was received in London. It was regarded as entirely unsatisfactory. On 4th January, it was announced that the British Government had sent full details of the case to the Governments of the big Powers, with copies of the British Note and the Albanian reply. The communications were intended as advance warnings in view of the probability of the matter being brought before the United Nations.



On 10th January, Great Britain placed her case against Albania before the Security Council of the United Nations under Article 35 of the Charter. This article gives any member of the United Nations the right to bring before the Security Council any dispute or situation which might lead to international friction or give rise to a dispute.

### EGYPT'S APPEAL TO THE UNITED NATIONS ORGANIZATION

Although agreement had been reached between the Government of the United Kingdom and the Egyptian Government on the revision of the 1936 Treaty as regards all essential matters which directly affected the military situation in Egypt, the latter Government insisted that the Sudan must also be dealt with in the revision.

#### THE SUDAN

The British contention is that the condominium agreement of 1899 should continue in force until the Sudanese attain self-governing status. The agreement provided for Anglo-Egyptian administration of the country pending self-determination; recognition of the sovereignty of the Egyptian Crown over the Sudan—as at present existing; and recognition of the duty of both Governments to aid the progress of the Sudan towards self-government.

The Egyptian Government now claims that Egyptian sovereignty over the Sudan is perpetual, whereas the British Government maintain that they "cannot sign away a people's right of self-determination in a treaty with a third party," and suggest that the Sudan question be settled separately with Sudanese delegates present.

On 26th January, the Egyptian Prime Minister—Nokrashy Pasha, stated that Egypt was submitting "the whole question of Egypt and the Sudan" to the United Nations Organization. The contention of his Government is that there can be "no division of the Nile valley."

It remains to be seen whether the General Assembly regard the matter as one which comes within the scope of the Charter. Meanwhile the terms of the 1936 Treaty continue to be valid.



## CORRESPONDENCE

*(Correspondence is invited on subjects which have been dealt with in the JOURNAL, or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the JOURNAL.—EDITOR.)*

### THE BIRTH OF MODERN AMPHIBIOUS OPERATIONS

SIR,—I was much interested to read Brigadier Head's lecture on "Amphibious Operations" in the November JOURNAL as I was the Wing Commander in the old I.S.T.D.C. I remember when we assembled in a casemate at Fort Cumberland in the Summer of 1938, there were four of us: Captain L. E. H. Maund, R.N., Major M. W. M. MacLeod, R.A., Captain P. Picton-Phillipps, R.M. and myself. There was a long baize-covered table, with a number of blank sheets of paper—no blanker than my mind on the subject of Combined Operations.

When the Centre opened the latest thing in landing craft was a horse boat, mechanization having proceeded no further than a ship's lifeboat equipped with crank handles for the occupants to drive a screw and achieve a speed of perhaps three knots; but from the fertile brain of Captain Maund—the Commandant, appeared the designs of the L.C.A. and L.C.T., the headquarters ship, pontoon bridges, infra-red lanterns to guide the First Flight ashore, and many other devices which proved their worth in years to come.

The I.S.T.D.C. produced amongst other things a long paper entitled "The Conduct of Combined Operations—A Memorandum" but the attitude of the three Ministries was not encouraging being generally that Combined Operations were not to be regarded as a serious operation in any major war of the future.

I spent a year as A.D.C.O. (Air) on the Staff of the then Director of Combined Operations—Admiral of the Fleet Sir Roger Keyes, from Summer 1941 to Summer 1942. During this time, as Brigadier Head remarked, much was planned and little accomplished; but it is interesting to remember that the first British airborne operation of the War—the parachute raid on the Apulia Aqueduct in Southern Italy, under the gallant leadership of Major T. A. G. Pritchard, R.W.F.—took place during that period.

The extent of the doldrums in which Amphibious Operations lay at this time is best illustrated by a draft Progress Report dated 24th March, 1941. It read as follows:—

#### PROGRESS REPORT

- (i) *In hand (Material)*
  - (a) New Construction—Cancelled.
  - (b) Conversion —Deferred.
  - (c) Design —Pending.
- (ii) *Operational*  
Operations is off.
- (iii) *Intelligence*  
Lessening.
- (iv) *Lessons Learnt*
  - (a) *Naval*—The fruits of office fall only into the laps of the docile.
  - (b) *Military*—Tanks won't float.
  - (c) *Air*—Nil.

The draft was suitably amended before submission!

G. M. KNOCKER,

4th January, 1947.

Group Captain.

### AN R.A.F. FILING SYSTEM

SIR,—I am in full agreement with both Major Runacres and Lieutenant-Commander Scott in their pleas, in recent issues of your JOURNAL, for improved Service filing systems.

Although the R.A.F. already has a standard system for use amongst its units and smaller formations (the "branch" system), all R.A.F. staff officers will, I think, agree



that time and effort are continually used up in discussing and deciding upon the filing of papers received and in seeking papers which have already been filed. The system is not complete. It is, however, capable of easy development into a sound, simple and automatic filing system without the confusion which would accompany a drastic change-over to a new system such as the "Dewey."

The existing "branch" system requires policy files to be indicated by a prefix denoting the formation owning the file; a number denoting the subject; a three-letter suffix indicating the branch to which the file belongs, e.g. FC/3069/AIR. Subsidiary files, dealing with subjects under the main policy heading, are indicated by a second number following the main number, e.g. FC/3069/2/AIR. At present all files are raised and numbered at the discretion of the officer in charge of a particular branch, and there is no uniformity at all between formations and units. The basis of the proposed reformation is the production and issue of a Standard Classification Book.

Such a volume, produced and amended by the Air Ministry, would ensure that all correspondence on identical subjects throughout the R.A.F. was dealt with under the same reference number, the prefix only being changed to indicate the unit or formation concerned. The Index would be similar to that issued by the U.S. Army Air Forces covering all files in that Service, and could be produced, initially, by one or two experienced administrative officers at Air Ministry level, after a review of existing files in all large R.A.F. H.Qs.

Subsequent to its issue all files opened in the R.A.F. would be in accordance with the Index, and thereafter filing at all levels would become automatic. Units need of course only open those files which they require for conduct of business, but all files opened would be in accordance with the Classification book.

The change over to the new system could be made in a short time. The process would be to re-number existing files in accordance with the index, retaining old file numbers until they are out-of-date, and using the new number for all new correspondence.

Even the Air Ministry, with its own large filing system, could participate in the new system by ensuring that all letters issued to R.A.F. formations bore a reference under the Standard Index as well as the Air Ministry reference.

There are, of course, further details to be finalised before this system can be introduced, but enough has been said to indicate that such an improvement in filing as is required by the modern Service is no "pipe-dream" so far as the R.A.F. is concerned.

B. A. CHACKSFIELD,  
Wing Commander, R.A.F.

5th November, 1946.

#### GENERAL GORDON TO A NAVAL OFFICER

The original of the following letter, addressed to Lieutenant Tait, R.N., has lately been presented to the Institution:

MY DEAR TAIT,—Received your letter 11.4.75 on 28.7.75. You are well out of this expedition for you would have been fifteen years too young for it. My experience is that no man under thirty-five years could stand this climate. You would have been therefore worse off than before. *all* my Europeans have gone I am glad to say for they all broke down and gave me precious little help not that it was their fault. Your fat might have benefitted you at the Pole, it would have done for you on Equator. I am now pushing up the Nile to the Lake, it has generally been believed that it was impracticable between the Lake and Gondokoro however I came on it when the river was rising and ~~was~~ tempted to try it and have got over half way with a steamer and three Nuggars. the current is very strong, and my ropes are bad, there are several bad rapids through which we haul the vessels by main force. I never thought much of your Cockatrice. you are all of you a precious sight too timid with your vessels. You fear the admiralty if you come to grief. I knock my steamers about enough and take them up falls that would make



your hair stand on end. it is wonderful what a deal a vessel will take before she gets smashed up. On those mudbanks of the Danube you never could come to much grief. I hope you will get all honours at the College. We want men like Morant rather than Bookworms. Goodbye and Believe me Yours sincerely

C. G. GORDON.

Labord. 12 Augt 1875.

(Note.—The gun vessel "Cockatrice" was employed on the Danube in 1871. At that time Colonel Gordon was British Representative on the Danube Commission. After the Crimean War the Powers signed the Treaty of Paris in which were certain clauses relating to the navigation of the Danube, including our right to station at all times two light craft at the mouths of the river.—EDITOR).

#### GENERAL GORDON TO A FEAR OFFICER



## GENERAL SERVICE NOTES

### MINISTRY OF DEFENCE

The Ministry of Defence was formally constituted on 1st January, 1947, when the following appointments under the Minister of Defence (Mr. A. V. Alexander) took effect :—

*Permanent Secretary.*—Sir Henry Wilson Smith.

*Chief Staff Officer.*—Major-General (acting Lieut.-General) Sir Leslie Hollis, Royal Marines, who also becomes Deputy Secretary (Military) of the Cabinet.

General Hollis became Assistant Secretary of the Committee of Imperial Defence in 1936. During the War he was Assistant Secretary in the Cabinet offices and Secretary to the Chiefs of Staff Committee.

### IMPERIAL DEFENCE COLLEGE

The 1947 course at the Imperial Defence College started on 14th January. General Sir William Slim, G.B.E., K.C.B., D.S.O., M.C., is Commandant. The Directing Staff are Rear-Admiral the Hon. G. H. E. Russell, C.B.E., D.S.O.; Lieut.-General G. G. Simonds, C.B., C.B.E., D.S.O.; Air Vice-Marshal Sir Hugh Lloyd, K.B.E., C.B., M.C., D.F.C.; and Mr. E. G. Harwood (Under-Secretary, Ministry of Food).

The following are attending the course as students :—

*Royal Navy.*—Captains T. M. Brownrigg, C.B.E., D.S.O.; Sir Anthony W. Buzzard, Bt., D.S.O., O.B.E.; W. W. Davis, D.S.O.; J. A. S. Eccles, C.B.E.; C. John; C. F. W. Norris, D.S.O.; S. H. Paton, C.B.E.; C. T. M. Pizey, C.B., D.S.O.; J. Terry, C.B.E., M.V.O.; G. Willoughby.

*Royal Marines.*—Colonel E. E. Johnson.

*Army.*—Brigadiers R. F. K. Belchem, C.B., C.B.E., D.S.O.; V. Boucher, C.B.E.; G. K. Bourne, C.B.E.; A. J. H. Cassels, C.B.E., D.S.O.; E. H. W. Cobb, C.B.E.; C. P. Jones, C.B.E., M.C.; R. W. McLeod; W. P. Oliver, C.B.E.; C. D. Packard, C.B.E., D.S.O.; R. St. G. T. Ransome; W. G. Roe; C. S. Sugden; J. H. D. Wilsey, C.B.E., D.S.O.

*Royal Air Force.*—Air Commodores L. T. Pankhurst, C.B.E., and G. W. Tuttle, C.B., O.B.E., D.F.C.; Group Captains L. K. Barnes, C.B.E.; P. F. Canning, C.B.E.; L. W. Cannon, C.B.E.; H. A. Constantine, C.B., C.B.E., D.S.C.; H. I. Cozens, C.B., A.F.C.; J. G. Elton, C.B.E., D.F.C., A.F.C.; S. H. C. Gray, O.B.E.; H. D. McGregor, C.B.E., D.S.O.; F. C. Read, C.B.E.

*Canada.*—Captain R. E. S. Bidwell, R.C.N.; Brigadier J. D. B. Smith; Air Commodore W. A. Orr.

*Australia.*—Rear-Admiral J. A. Collins, C.B., R.A.N.; Brigadiers E. L. Sheehan, C.B.E., and H. Wells, C.B.E., D.S.O.; Air Commodore A. L. Walters, C.B.E., A.F.C.

*New Zealand.*—Colonel D. W. Andrew, V.C., D.S.O., and Air Commodore S. Wallingford, C.B.E., R.N.Z.A.F.

*South Africa.*—Brigadier W. H. Hingston, C.B.E.

*India.*—Brigadiers A. R. Barker, D.S.O., O.B.E., M.C.; K. M. Cariappa, O.B.E.; J. N. Chaudhuri, O.B.E.; J. R. Reynolds, C.B.E. Messrs. A. T. Naqvi and N. M. Wanchoo.

*Civil Service.*—Messrs. L. H. Curzon, Ministry of Supply; G. W. Furlonge, O.B.E., Foreign Service; E. F. H. Gould, Post Office; J. F. Hewitt, Board of Trade; W. H. T. Luce, Sudan Political Service; R. Newton, Colonial Service; K. A. L. Parker, Home Office; H. F. Rossetti, Ministry of Labour; T. G. Usborne, Ministry of Transport.

*Metropolitan Police.*—Deputy Commander R. Sheldon.



### JOINT SERVICES STAFF COLLEGE

The Joint Services Staff College was opened in the New Year at Latimer House, Chesham, Buckinghamshire. Each course is to last six months, and there will be about a hundred students, chosen from the Royal Navy, the Army, the R.A.F., the Home Civil Service, the Dominions and India.

There will be a wide syllabus covering the activities of all three Services and of Government direction in war-time, designed to qualify officers for appointments on joint staffs, and for higher staff appointments in their own Services.

The directing staff of the college will be drawn from all three Services, the Commandant being found by each in turn. The first holder of the appointment is Rear-Admiral C. E. Douglas-Pennant. The College will develop mutual understanding and a common doctrine between the Services and evolve a standardized system of staff work.

Officers will normally attend this College at some period after passing through their respective Staff Colleges, and some years before attending the Imperial Defence College. Among the subjects that will be studied are the organization and capabilities of the three Services, Imperial strategy, the study and analysis of inter-Service and joint operations, and the planning and execution of joint operations of all kinds. Such subjects as weapon and equipment development, scientific warfare, military geography, the machinery of war production and modern production methods, the Governmental and central direction of war will also be included in the syllabus.

Members of the directing staff of the College are drawn from all three Services, the three senior members being Captain M. L. Power, R.N., Colonel T. E. D. Kelly, Royal Artillery, and Group Captain G. C. Barrett, R.A.F.

### IMPERIAL TROOPS IN SOUTH-EAST ASIA

Having completed the task allotted to them the British-Indian forces in the Netherlands East Indies were withdrawn by 30th November, 1946. With the exception of small R.A.F. staging posts in Siam and French Indo-China, a railway workshop company remaining in Siam, at the request of the Siamese Government, in connection with the export of rice, and one R.A.F. beacon-operating detachment remaining in the N.E.I. for two or three months pending the substitution of trained Dutch technicians, this completed the withdrawal of all Imperial troops from all foreign territories in South-East Asia.

On 1st December, 1946, the appointment of Supreme Allied Commander, South-East Asia, was abolished and replaced by a Commanders-in-Chief Committee consisting of the three Service Commanders-in-Chief, who on all inter-Service matters concerning British forces in South-East Asia have a collective responsibility to the British Chiefs of Staff.

A small inter-Service secretariat will serve the British defence committee in South-East Asia, the Commanders-in-Chief committee, and subordinate committees. It will also act as a link between the Governor-General, the Special Commissioner, and the three Services, and will co-ordinate work of a joint Service and civil nature.

In consequence of this reorganization, H.Q. Allied Land Forces, South-East Asia, and H.Q. Air Command, South-East Asia, will be respectively redesignated South-East Asia Land Forces, and Air Command, Far East.

### OFFICIAL WAR HISTORIES

The Prime Minister announced on 25th November, 1946 that Mr. J. R. M. Butler, Fellow and Lecturer of Trinity College, Cambridge, is to have charge of the official military histories of the War of 1939-45.

It is not yet possible to state what form the military histories will take; but the aim will be to provide a broad survey from an inter-Service point of view rather than separate accounts of the parts played by each of the three Services.



## CANADA

**MINISTRY OF DEFENCE.**—The policy under which the Canadian armed forces are being reorganized for peace-time was outlined on 16th January by Mr. Brook Claxton, Minister of National Defence. A decision to bring all three defence Services under one Minister was taken on December 12th.

Mr. Claxton said that the international situation, the proposals made at a recent session of the United Nations, and rapid changes in weapons made it undesirable to settle finally the composition or character of the country's armed forces. Not more than three-quarters of the total of over 51,000 men fixed a year ago would be recruited, and the Navy and Air Force had already received their full quota. Numbers in the forces had fallen from over 780,000 to under 43,000, and there were fewer than 9,000 men of the wartime Army still to be released.

All defence offices in Ottawa will be centralized in one group of buildings, and administrative duties common to the three Services will be performed by one staff. Consolidation of the medical, welfare, and educational services, and the communications and public relations branches is under consideration.

## FOREIGN

## UNITED STATES

**CO-ORDINATION OF THE SERVICES.**—It was announced from Washington on 16th January that the Secretary of State for War and the Navy Secretary in a joint letter to the President stated their willingness to support legislation in which the following points are incorporated:—The creation of a Council of National Defence, a National Security Resources Board, and the continuation of the Central Intelligence Agency; the armed forces to be organized under a Secretary of National Defence, and the placing of army, navy, and air forces, each with a military chief, under Departments of Army, Navy, and Air Force. There would be a War Council consisting of the National Defence Secretary and the Secretaries of the three merged Services with their military heads; and a Joint Chiefs of Staff board. The National Defence Secretary would have authority to establish common policies and programmes for integrated operation of the three Departments.

The scheme is notable in that for the first time it creates an independent Air Force.

**UNIFIED COMMANDS.**—On 16th December, 1946, President Truman approved a system of single command, either Navy or Army, in each area of the world where American armed forces operate. A joint announcement by the United States Army and Navy said that commanders in these areas will be responsible to the Joint Chiefs of Staff, who recommended the system as a means of solving problems of a split command which have arisen since the end of the War, notably in the Pacific.

**DEVELOPMENT OF GUIDED MISSILES.**—The Army Ordnance Department in conjunction with the General Electric Company are engaged in a programme of research on guided missiles. This was started as long ago as November, 1944 when scientists from the General Electric Company went to Europe to study the captured V.2 rockets. Since then, experiments with these rockets have been carried out at the Army Ordnance Proving Grounds.

Power propulsion research is being conducted along the lines of rocket engines, ram-jets and a combination of both. The ram-jet is simply a cylinder which compresses the air through speed in flight, adds and ignites fuel in the combustion chamber and derives forward motion from the thrust produced by expanding gases projected through the nozzle. Being dependent on oxygen from the air, the range of ram-jets is subject to altitude limitation and in their present form the ceiling cannot much exceed the maximum altitude for aircraft.

Rocket fuel, as used by the Germans, is liquid oxygen and alcohol mixed in the combustion chamber. This necessitates the use of materials which will withstand the corrosive action and resist melting by the generation of great friction heat in flight.



In connection with these experiments rockets with the war-head replaced by a special container with recording instruments are being used to obtain information about conditions in the stratosphere at far greater heights than has so far been attained by observation balloons.

**SUPERSONIC WIND TUNNEL.**—The National Advisory Committee for Aeronautics is now investigating problems of flight at higher speeds than sound, in a supersonic wind tunnel. It is designed to operate exclusively above the present limit of human flight imposed by the natural barrier of the velocity of sound (approximately 760 m.p.h.). Tests are being conducted with models of guided missiles and jet- and rocket-propelled aircraft with speeds up to 1,500 m.p.h.

Even greater speeds, of the nature of 2,600 m.p.h., will be provided for in a new supersonic wind tunnel.

**A SUPER POISON WEAPON.**—The U.S. Chemical War Service, according to Dr. Gerald Wendt, editorial director of *Science Illustrated Magazine*, has already spent 50 million dollars in research on a super-deadly poison "invisible, microscopic in size, capable of spreading to reach every living enemy and . . . easily and cheaply prepared by any belligerent who has as much as a brewery and the skill to operate it." This, he said, is a new, innocent-looking crystalline toxin, the most potent poison known to man. It is so powerful that less than one seven millionth of a gram—a quantity too small to see—is enough to kill a man. One gram is enough to kill seven million human beings and an ounce to kill 180 million.



## NAVY NOTES

### GREAT BRITAIN

#### H.M. THE KING

Colonel R. A. R. Neville, R.M., has been appointed an Aide-de-Camp to the King, vice Wildman-Lushington (1st October, 1946).

Colonel J. E. Leech-Porter, C.B.E., R.M., has been appointed an Aide-de-Camp to the King, vice Lamplough (24th November, 1946).

The Rev. E. G. M. Crocker, M.A., R.N., has been appointed an Honorary Chaplain to the King from 6th September, 1946, in succession to the Rev. B. G. Beale, placed on the Retired List.

Surgeon Rear-Admiral J. A. Maxwell, C.B.E., C.V.O., has been appointed an Honorary Surgeon to the King from 26th October, 1946, in place of Surgeon Rear-Admiral H. R. B. Hull, placed on the Retired List.

Surgeon Captain D. A. Pritchard, R.A.N., has been appointed an Honorary Physician to the King, and Surgeon Captain Lionel Lockwood, M.V.O., D.S.C., R.A.N., an Honorary Surgeon to the King.

#### FIRST LORD OF THE ADMIRALTY

It was announced in *The London Gazette* on 29th October that the King had conferred the dignity of a Viscounty of the United Kingdom upon the Right Hon. George Henry Hall by the name, style, and title of Viscount Hall, of Cynon Valley in the County of Glamorgan. Lord Hall succeeded Mr. A. V. Alexander as First Lord of the Admiralty early in October.

#### SECRETARY OF THE ADMIRALTY

Sir Henry Vaughan Markham, K.C.B., M.C., who had been Secretary of the Admiralty since December, 1940, died on 14th December at the age of 49. He entered the Admiralty in 1921, and after serving as Principal Private Secretary to two First Lords, was appointed Assistant Secretary in September, 1938. Shortly before war broke out in 1939 he became Principal Priority Officer. He was created a K.C.B. in 1941.

On 3rd January it was announced that Mr. J. G. Lang, C.B., had been appointed Secretary of the Admiralty in succession to the late Sir Henry Markham. Mr. Lang was born in 1896, and entered the Admiralty in 1914. In 1942 he was appointed Director of Labour; in 1944 Principal Assistant Secretary of Naval Personnel; and in 1946 Under-Secretary of Establishments. He had been Acting Secretary during Sir Henry Markham's illness.

#### FLAG APPOINTMENTS

**PORTSMOUTH.**—The King has approved the appointment of Admiral Lord Fraser of North Cape to be Commander-in-Chief, Portsmouth, in succession to Admiral Sir Geoffrey Layton, the appointment to take effect on 15th May, 1947.

**MEDITERRANEAN.**—On 13th November, the appointment was announced of Vice-Admiral Sir Cecil H. J. Harcourt to be Vice-Admiral (Air) and Second in Command of the Mediterranean Fleet, to date 7th January, 1947.

**FIRST CRUISER SQUADRON.**—On 2nd December, the appointment was announced of Rear-Admiral Lord Mountbatten of Burma to be Rear-Admiral Commanding First Cruiser Squadron, Mediterranean Fleet, in succession to Rear-Admiral H. R. G. Kinahan, to take effect in April, 1947. Lord Mountbatten was appointed on 6th January to the Senior Officers' Technical Course at Portsmouth before taking up his sea command, on which date he reverted from the acting rank of Admiral, which he held during his appointment as Supreme Allied Commander, South-East Asia Command, to his substantive rank of Rear-Admiral.



**DIRECTOR OF DOCKYARDS.**—On 3rd December, the appointment was announced of Vice-Admiral C. B. Barry to be Director of Dockyards, in succession to Vice-Admiral Sir Cecil P. Talbot, from 20th December.

**PACIFIC AND EAST INDIES.**—On 20th December, the appointment was announced of Rear-Admiral G. E. Creasy to be Rear-Admiral, Aircraft Carriers and Air Stations, British Pacific Fleet and East Indies, in succession to Rear-Admiral A. R. M. Bridge, to date February, 1947.

#### PROMOTIONS

**NEW REAR-ADMIRALS.**—The following officers have been promoted to Rear-Admiral, to date 8th January, 1947:—

Captain Philip King Enright, C.B.E., A.D.C.  
 Captain Douglas Young-Jamieson, A.D.C.  
 Captain Clifford Caslon, C.B.E., A.D.C.  
 Captain William Rudolph Slayter, C.B., D.S.O., D.S.C., A.D.C.  
 Captain Geoffrey Alan Brooke Hawkins, M.V.O., D.S.C.  
 Captain William Gladstone Agnew C.B., C.V.O., D.S.O.

**HALF-YEARLY LIST.**—The following promotions have been made to date 31st December, 1946, except where different dates have been specially indicated:—

**Commander to Captain.**—E. A. Gibbs, A. C. G. Ermen, R. S. Wellby, E. H. Thomas, P. L. Collard, J. D. Shaw-Hamilton, A. H. Thorold, S. J. S. Boord, J. E. Slaughter, G. T. Coney, P. Dawney, R. H. Wright, J. F. Whitfield, A. F. Matheson, D. H. Fuller, H. S. Hopkins, A. C. C. Miers, V.C., W. F. H. C. Rutherford.

**Lieutenant-Commander to Commander.**—To be promoted to Commander to date 31st December, 1945, in accordance with A.F.O. 7168/45:—E. V. St. J. Morgan, G. T. Cooper<sup>1</sup>.

Normal promotions, to date 31st December, 1946:—J. C. Cockburn, A. G. L. Seale, F. J. G. Hewitt, M. Bruce, H. Duncan, E. N. Sinclair, J. R. C. Moultrie, H. W. Firth, C. E. Fenwick, H. H. R. Moore, I. W. T. Beloe, T. J. G. Marchant, J. P. Scatchard, C. P. McN. Hart, I. L. T. Hogg, R. D. Franks, H. B. Acworth, D. R. Mallinson, J. M. Palmer, R. J. H. Stephens, J. E. Scotland, H. Kirkwood, T. P. Aubrey, D. A. R. Duff, D. Vincent-Jones, G. E. Luckett, M. N. Tufnell, P. Hankey, R. L. Alexander, R. E. Hutchins, E. G. Warren, J. F. D. Bush, J. A. Ievers.

**Commander (E) to Captain (E).**—G. Hearson, J. D. N. Ham, H. J. B. Grylls, N. E. Dalton.

**Lieutenant-Commander (E) to Commander (E).**—To be promoted to Commander (E) to date 31st December, 1944, in accordance with A.F.O. 7168/45:—A. G. Reid<sup>1</sup>.

Normal promotions, to date 31st December, 1946:—J. K. McA. Tod, T. E. H. Line, A. I. F. Blair, J. C. Pearson, J. L. Walker, F. J. King, R. A. H.

<sup>1</sup> Promotions normally made by selection were not conferred on officers while they were prisoners-of-war. Note was made of those who would otherwise have been promoted. Their records were examined on their return and they may be promoted, with effect from the earliest date at which it can be determined that they were fit and suitable for promotion, irrespective of whether they are over the promotion zone or not.

Their Lordships have accordingly approved that in individual cases where such an officer is recommended as being fit for higher rank, promotion will be granted additional to the normal numbers of half-yearly promotions. Their intention is that this arrangement will remain operative until in their judgment officers who have been prisoners-of-war have had a fair chance to be considered for promotion in the ordinary way. The seniority of officers promoted under this dispensation will be adjusted according to the merits of each case.



Bartley, T. H. Maxwell, H. G. Spriggs, D. P. Sparham T. Wheeldon, R. H. Mercer, A. C. Mahony, P. C. Gibson.

## RETIREMENTS

The following officers have been placed on the Retired List in the rank of Captain, to date 8th January, 1947:—

Captain Francis Cyril Flynn, A.D.C.

Captain Ian Agnew Patterson, C.B., C.B.E., D.S.O., A.D.C.

Captain Henry Hastings McWilliam, A.D.C.

Captain Cecil Charles Acland Allen, A.D.C.

Captain William Derek Stephens.

Captain Leslie Swain Saunders, D.S.O.

## ADMIRALTY APPOINTMENTS

Captain C. C. Hughes-Hallett is to succeed Commodore R. M. T. Taylor as Deputy Chief of Naval Air Equipment.

Captain R. T. White, from duty with the Second Sea Lord, has been appointed Deputy to the Admiral Commanding Reserves, in succession to Commodore H. C. C. Forsyth, R.N.R.

Captain C. H. Duffett has been appointed Director of the Operations Division, Admiralty Naval Staff, from 10th January, in succession to Captain F. R. Parham.

Captain D. H. Hall-Thompson, Deputy Director of Plans (Q), was appointed to succeed Captain E. W. L. Longley-Cook, as Director, on 2nd December. The new Deputy Director is Captain U. H. R. James.

Captain C. V. M. Dolphin has been appointed Assistant Director of Naval Equipment, in succession to Captain W. P. McCarthy, who has become Deputy Director in succession to Captain G. O. C. Davies.

Captain C. E. Lambe was appointed for special duty with the Director of Plans, with the acting rank of Rear-Admiral, from 3rd December.

Captain K. Mackintosh was appointed to the Admiralty Naval Staff on 15th January, to succeed Captain R. D. Watson as Assistant Director of Plans.

Captain H. P. Henderson, Deputy Director of the Combined Operations Division of the Naval Staff, has been appointed Assistant Director of Plans (Combined Operations).

## HONOURS AND AWARDS

*Order of the Garter.*—It was announced in *The London Gazette* on 3rd December that the King had made seven appointments as Knights of the Most Noble Order of the Garter. Among them was:—

Admiral Viscount Mountbatten of Burma, G.C.V.O., K.C.B., D.S.O., A.D.C.

*George Cross.*—It was announced on 5th November that the King had approved the award of the George Cross to:—

Lieutenant-Commander Patrick Albert O'Leary, D.S.O., R.N.

In April, 1941, he escaped from France and set up a most successful organization to help the escape of Allied prisoners of war. Later he was betrayed to the Gestapo and, though put to many terrible forms of torture, he refused to betray his helpers. It is now known that of the many British and American officers and men rescued over 250 owe their safety directly to Lieutenant-Commander O'Leary, whose fortitude and determination overcame every difficulty.

He was invested with the George Cross by the King at Buckingham Palace on 19th November.



## ORDER OF THE BRITISH EMPIRE

**C.B.E.**—In *The London Gazette* on 12th November it was announced that Commander (then Acting Captain) R. C. S. Garwood, R.N., had been appointed a C.B.E. (Military) for outstanding services as Naval Officer in Charge, Sourabaya, since October, 1945.

## ADMIRAL AS HONORARY COLONEL

In *The London Gazette* on 22nd November, it was announced that the King had been pleased to approve the appointment of Admiral Sir Walter H. Cowan, K.C.B., D.S.O., M.V.O. (Retired), as Honorary Colonel of the 18th King Edward VII's Own Cavalry, to date 11th November, 1946.

The appointment of Honorary Colonel of an Indian regiment is rare; for a naval officer to be selected for such an honour is unprecedented. The appointment arises out of Admiral Cowan's service with the 18th Cavalry in the Western Desert as liaison officer in the recent war, although 70 years of age. He was regarded affectionately as the "mascot" of the regiment, with which he served in every desert operation in which the 18th took part, including the famous "Balaclava" charge against the German guns at Mechili, until he was captured at Bir Hacheim on 27th May, 1942. He was repatriated in 1943, and in 1944 was awarded a Bar to the D.S.O. he had gained in the Nile Expedition in 1898.

## NEW YEAR HONOURS

The following were included in the New Year Honours conferred by the King:—

**K.C.B. (Military).**—Vice-Admiral Sir Douglas B. Fisher.

Vice-Admiral (S) Malcolm G. S. Cull.

**C.B. (Military).**—Rear-Admiral L. H. Ashmore, Rear-Admiral J. W. Durnford, Rear-Admiral (S) E. S. Duggan, Rear-Admiral (E) D. C. Ford, Rear-Admiral H. E. Horan (Retired), Surgeon Rear-Admiral H. R. B. Hull, Major-General G. E. Wildman-Lushington, R.M.

**G.B.E. (Military).**—Admiral Sir Geoffrey Layton.

**K.B.E. (Military).**—Admiral John G. Grace (Retired).

**C.B.E. (Military).**—Captain W. Y. La Roche Beverley, R.N., Captain A. W. Clarke, R.N., Rear-Admiral E. B. C. Dicken (Retired), Captain (S) D. H. Doig, R.N., Superintendent D. Isherwood, W.R.N.S. (Retired).

On 2nd January, it was announced that the King had given orders for the following promotion in the Order of the Bath:—

**K.C.B.**—Charles Swift Lillicrap, C.B., M.B.E., Director of Naval Construction.

## PERSONNEL

**SHORT SERVICE COMMISSIONS.**—To make good a temporary shortage of Executive Branch officers, the Admiralty in October announced the offer of a number of short-term Commissions in the Royal Navy to war-time Executive officers of the R.N.R. and R.N.V.R., temporary or permanent, including the corresponding branches of the Reserves in the Dominion and Royal Indian Navies.

Applications were invited from those under the age of 32 who were medically fit for general service. Commissions will be for a minimum of four years, but officers may be retained up to five years, and some fifty of them will be allowed to transfer to the permanent lists of the Royal Navy before the end of that period. Those released after four years service will receive a tax-free gratuity of £450, with a proportionate increase to those retained longer.

A further announcement on 3rd December invited applications from officers under 35 on 31st December, 1946, and of the rank of Lieutenant-Commander or below. At a later date officers serving on extended service Commissions will be given an opportunity



to transfer to permanent Commissions. It is anticipated that up to fifty such transfers will be made, but the age limit for applying for transfer will be 28 on 31st December, 1946.

**SUPPLY COMMISSIONS.**—On 28th November, it was announced that the offer of short-term Commissions in the Royal Navy had been extended by the Admiralty to the Supply and Secretariat Branch. Commissioned Officers of the R.N.R. and R.N.V.R. up to the age of 40 on 1st August, 1946, and Warrant Officers up to 50, were invited to rejoin for a period of four years.

**ELECTRICAL OFFICERS.**—Further details of the new "L" or Electrical Branch of the Royal Navy, referred to in the November JOURNAL, show that officer candidates for this Branch will be accepted once a year only from boys between 17 and 19 who have taken the higher school certificate, with mathematics and physics as main subjects. They will become Naval Cadets and will spend their first year in general naval training, chiefly in the training cruiser to which Cadets of all branches are sent. They will go to Cambridge University for a three-year course equivalent to that for honours degree. Their rank will then be Midshipman (L), but they will not wear uniform or be distinguishable from other undergraduates. If satisfactory, they will be promoted to Sub-Lieutenant at the end of their second year. On leaving the University, they will have a further two years training, partly at sea in H.M. ships, partly at a naval electrical school, and partly with firms manufacturing naval electrical equipment. During this period, subject to satisfactory progress, they may be promoted to Lieutenant (L). They will then, after nearly six years graduation, become specialist officers. Financial arrangements, as in other branches, will ensure that no boy with the necessary ability will be debarred from the scheme. Full details may be obtained from the Secretary of the Admiralty (C. W. Branch).

**RECRUITING.**—In a Parliamentary reply on 16th October it was stated that the number of men who had accepted extended service engagements was considerably less than the Admiralty had hoped for, and they were prepared to accept more volunteers. The flow of new recruits was reasonably satisfactory.

**DIVINE SERVICE.**—In a Parliamentary reply on 11th October, it was announced that orders were being issued that day to the effect that, while every facility was to be given for voluntary attendance at divine service on Sunday, officers and men (except those who are under the age of 17½) were no longer required to attend. The Board of Admiralty has, however, expressed a conviction of the value and importance of the practice of corporate divine worship both to the individual and to the Service as a whole, and relies on all officers and men of their own free will to support Commanding Officers and Chaplains in the arrangements made for corporate divine worship by ships' companies.

#### WOMEN'S ROYAL NAVAL SERVICE

**DIRECTOR, W.R.N.S.**—Superintendent J. M. Woolcombe, C.B.E., was appointed Director of the W.R.N.S., in succession to Dame Vera Laughton Matthews, as from 22nd November, 1946. Miss Woolcombe, the only daughter of the late Rear-Admiral Maurice Woolcombe, served in the Intelligence Division of the Admiralty during the 1914-18 war. She joined the W.R.N.S. in July, 1939, and was appointed Chief Officer at Plymouth. From May, 1940, she was Superintendent of Personnel at W.R.N.S. Headquarters until January, 1943, when she was appointed Deputy Director of Manning. She was appointed Deputy Director, W.R.N.S., in May, 1946.

**EXTENDED SERVICE SCHEME.**—The terms for temporary extended service in the W.R.N.S. were announced in mid-November. This is open to all serving and released officers and ratings of the W.R.N.S. who have completed a minimum of one year's service. Those who are accepted for it will be able to apply for permanent service in the W.R.N.S. when that is introduced.



The categories being maintained in the extended service are Cook, Educational Vocational Training Instructor, Hairdresser, Mess Caterer, Motor Transport Driver, Quarters Assistant, Regulating, Switchboard Operator, Welfare Worker, Writer (Pay, General and Shorthand), Steward, Clothing, Cinema Operator, Signal Distribution Office Watchkeeper, Teleprinter Operator, Victualling, Wireless Telegraphist, Aircraft Direction, Naval Airwoman, Air Stores, Meteorological, Radio Mechanic and Range Assessor.

**RECRUITING.**—Vacancies exist for new recruits who volunteer for Clerical, Technical, Cook and Steward Categories. Enrolment is for three years.

#### MATERIAL

**H.M.S. "VANGUARD".**—The new battleship "Vanguard", Captain W. G. Agnew, in which the King and Queen and the Princesses are making their voyage to South Africa, left Portsmouth for a shakedown cruise to Gibraltar on 4th December, returning in time for Christmas leave.

**TRAINING BATTLESHIP.**—H.M.S. "Ramillies" has been appropriated for use as a training ship at Portsmouth, in place of the old wooden ships "Implacable" and "Foudroyant", which had been used temporarily for training purposes during the War and are being handed back to the Society for Nautical Research.

**ADMIRALTY YACHT.**—It was announced in the House of Commons on 30th October that in the interests of economy no steps are being taken for the time being to provide a successor to H.M.S. "Enchantress", Admiralty yacht.

**NEW DESTROYERS.**—The new destroyer "Cadiz" joined the Home Fleet at Portland on 20th November in place of the "Zodiac", which has been placed in reserve. The destroyer "Cromwell" was on 25th October formally handed over to the Royal Norwegian Navy at Devonport Dockyard by Admiral Sir Henry Pridham-Wippell, Commander-in-Chief, Plymouth, on behalf of the Admiralty.

#### DOCKYARDS AND BASES

**WAR WORK.**—Details of the work of the Royal Dockyards in keeping the Navy at "a pitch of fighting excellence" during the War was described by the Admiralty in a statement issued on 2nd November. The 97,000 refits completed were only part of their achievements. Though not primarily concerned with new construction, they laid down an aircraft-carrier, four cruisers, four sloops, 22 submarines, and six floating docks. They executed many requirements of the Army and Royal Air Force, and undertook numerous projects beyond their normal work to relieve outside industry.

Portsmouth Dockyard was the main springboard for the assault on Europe, and fitted out nearly a thousand miscellaneous vessels for the Normandy landings. It also built the first two midget submarines.

Special jobs at Devonport Dockyard included the disguise of the thirty-year old battleship "Centurion" to look like the modern "King George V"; she ended her service as a blockship in the "Mulberry" harbour off Normandy.

Chatham completed 1,360 refits of ships.

Sheerness became a first-aid station for the Channel convoy escorts and was largely responsible for equipping and repairing the "little ships" of Dunkirk in 1940.

Rosyth was reopened and developed in 1939 to meet operational requirements, and all five battleships of the "King George V" class and some of the new fleet aircraft-carriers were fitted out there.

**SINGAPORE.**—On 28th November, the Japanese cruiser "Shiretoko" was re-floated from the floating dock at Singapore. This enabled experts to survey the dock, which, scuttled in February, 1942, when Singapore fell, was refloated by the Japanese, and sunk again by American bombers in 1945 while the "Shiretoko" was undergoing repairs.



### ROYAL NAVAL VOLUNTEER RESERVE

**RECRUITING REOPENED.**—The Admiralty announced on 6th November that the post-war conditions for ratings of the permanent R.N.V.R. had been decided and recruiting would begin immediately. Ratings who served in the Navy during the War in the seaman, communications, writer, stores, engine-room, electrical, shipwright, or ordnance branches are eligible to apply. Hostilities only ratings eligible for the R.F.R. may join the R.N.V.R. instead. Ratings who are entered on List I of the R.N.V.R. will be able to qualify for an annual bounty of £5 and to supplement this by a maximum of £3 a year depending on their rating and the number of extra drills they attend. In addition, they will be eligible for a training expenses allowance. The list and addresses of the post-war Divisions were given in the November JOURNAL.

With the very large Reserve Fleet now in existence the need for skilled and efficient reserves is vital, and the Admiralty hope that there will be a large response to this call for volunteers for the permanent R.N.V.R.

### ROYAL MARINES

**HIGHER COMMANDS.**—A reorganization of the higher commands in the Royal Marines has been made in consequence of the assumption of Commando duty by the Corps in addition to providing detachments for H.M. ships. Before the War, there was a Royal Marine Division at each of the three Home Ports, commanded by a Colonel Commandant. There are now two or more other training establishments in each command which, with the R.M. Barracks (now reduced to Colonel's commands), form a "group" under the command of a Major-General, who is under the direct command of the Commandant General, Royal Marines, at the Admiralty. The new organization will facilitate expansion in case of emergency.

**PROMOTIONS AND RETIREMENTS.**—Colonel (acting Colonel Commandant, temporary Brigadier) V. D. Thomas, C.B.E., to be Acting Major-General (23rd September, 1946). Colonel (local Major-General) G. E. Wildman-Lushington, C.B.E., A.D.C., to be Major-General (1st October, 1946). Major-General R. H. Campbell, C.B., M.C., to Retired List (1st October, 1946). Major-General A. H. E. Reading, C.B.E., to Retired List (24th November, 1946). Colonel C. R. W. Lamplough, C.B.E., D.S.C., A.D.C., to be Major-General (24th November, 1946). Colonel (acting Major-General) V. D. Thomas, C.B.E., to be Major-General (25th November, 1946).

### DOMINIONS AND COLONIES

#### AUSTRALIA

**COMMAND.**—Commodore J. A. Collins on 11th November relinquished the command of the Australian Naval Squadron to Commodore H. B. Farncomb, in order to proceed to England for the 1947 course at the Imperial Defence College.

**ANTARCTIC EXPEDITION.**—It was announced from Canberra on 19th December that the Cabinet had decided to send a naval vessel, equipped with suitable aircraft, on a short reconnaissance voyage to the Antarctic to find a suitable ice-free base. The Government is to proceed with plans for the exploration of Australian Antarctic territory.

**PROMOTIONS.**—The following promotions have been announced by the Australian Naval Board :—

To be *Rear-Admiral*, to date 8th January, 1947 :—

Captain (Commodore, First Class) Harold Bruce Farncombe, C.B., D.S.O., M.V.O.

Captain (Commodore, First Class) John Augustine Collins, C.B.



## MALAYA

**NEW NAVY.**—It was announced from Singapore on 21st December that appropriations had been approved for the formation of a "Royal Malay Navy" in the 1947 estimates, and that the training of the nucleus of the force had already begun.

## FOREIGN NAVIES

## ARGENTINE

**NEW NAVAL PROGRAMME.**—According to *The Navy* for January, 1947, an important programme of naval construction has been authorized by the Argentine Government. It provides for the acquisition or construction of an aircraft carrier, a cruiser, 4 destroyers, 3 submarines, 10 patrol vessels and a supply ship tenders for which have been invited.

## FRANCE

**NAVAL BUDGET.**—Under a much reduced naval budget, a large part of naval construction or reconstruction will be in abeyance. No new ships were due to be laid down in 1946 and only those under construction will be completed where the final outlay will not be greater than the cost entailed by abandoning the construction. The re-conditioning of the battleship "Jean Bart," which was to have cost 1½ billion francs, has been slowed down.

**SUBMARINE DISASTER.**—The ex-German U.2326 of 250 tons was engaged in deep diving tests off Toulon on 5th December last when she failed to return to the surface. Three days later a large oil patch was observed, which it was considered must have come from the missing submarine. There were 23 officers and men, including the Head of the Submarine Section of the Naval Staff, on board.

## NORWAY

**ACQUISITION OF BRITISH SUBMARINES.**—Three submarines of the Royal Navy, the "Venture," "Votary" and "Viking," were handed over to the Royal Norwegian Navy in September last. They have been renamed the "Utstein," "Uthaug" and "Utvær."

## RUSSIA

**COMPOSITION OF THE FLEET.**—According to *La Revue Maritime* for December, 1946, the Soviet Fleet is believed to be composed of the following units:—

## Baltic—

- 1 old battleship.
- 2 9,000 ton cruisers of the "Kirov" class.
- 1 6,000 ton cruiser, ex-German.
- 10 destroyers.
- 30 submarines.

## Black Sea—

- 1 old battleship, "Sevastopol."
- 2 cruisers of the "Kirov" class.
- 1 old cruiser.
- 10 destroyers.
- 15 submarines.

## Arctic Sea—

- 1 battleship "Arkangelsk" (ex-H.M.S. "Royal Sovereign").
- 1 7,000 cruiser "Murmansk" (ex-U.S.S. "Milwaukee").
- 6 destroyers.
- Some submarines.

## Far East—

- 1 or 2 cruisers of the "Kirov" class.
- 10 destroyers.
- A large number of submarines.



In addition, there are a considerable number of escort and auxiliary vessels.

**ENLISTMENT OF GERMAN NAVAL OFFICERS.**—According to a Press report from Germany, a number of former German naval officers have been offered appointments in the Russian navy with the same rank as they held in their own service. Favourable terms have also been offered to naval technicians.

**CONSTRUCTION OF U-BOATS.**—According to what is described as 'a reliable source in Berlin', raw material for the manufacture of U-boat components in former German factories is being imported into the Russian Zone from Russia. The materials are reputed to be destined for one or more of four firms which are turning out U-boat parts.

### UNITED STATES

**PACIFIC BASES.**—Admiral John H. Towers, Commander-in-Chief, Pacific Fleet, informed a Press Conference in the latter part of last year that, in the interests of economy, a dozen or more of the 53 overseas bases would be abandoned.

Guam is eventually to be a second Pearl Harbour in the far Pacific; Kodiak in the Aleutians is "The outstanding base in the Northern Pacific." All plans for improving bases were being co-ordinated with the War Department in the interests of both Services.

**ROCKET ARMED CAPITAL SHIPS.**—The partially completed 45,000 ton battleship "Kentucky" and the 27,000 ton battle cruiser "Hawaii" are being adapted to carry a main armament of rocket launching tubes in place of the 16 in. guns of the former and of the smaller guns of the latter. It has been semi-officially stated that these will fire guided missiles and Navy officials have forecast that "The design studies now being made for the 'Kentucky' and the 'Hawaii,' together with missiles guided by carrier-based aircraft, will lead to a revolution in the striking power of naval warships." The rocket tubes are reputed to be designed to launch a missile at least as large as the German V2 rocket.

The "Kentucky" is reported to be about 71 per cent. and the "Hawaii" 85 per cent. completed.

**POSTPONEMENT OF THIRD ATOM BOMB TEST.**—The Joint Chiefs of Staff consider that the successful completion of the first two atomic bomb tests, together with the original experimental test in New Mexico and the experience in Hiroshima and Nagasaki, have provided sufficient information for the time being. It has, therefore, been decided to postpone indefinitely the third Bikini atomic bomb test, the date of which had been tentatively set for 1st March, 1947.

**RADAR CONTROLLED LANDING ON CARRIERS.**—The U.S. Navy have developed a radar-controlled landing approach system which, it is claimed, has solved the problem of landing on safely at night or during poor visibility conditions. This new method, termed "Carrier Control Approach" (C.C.A.), serves a dual function in that it also enables the Traffic Control Group to maintain a visual check on all aircraft waiting to land on so that they can be signalled in as desired.

Actual tests have been carried out in an escort carrier, when 141 successful night landings were made. Two of the large "Essex" Class carriers have been given the equipment for further trials. The control room is built under the flight deck near the stern.



## ARMY NOTES

### H.M. THE KING

The Princess Royal, Colonel-in-Chief, visited the Depot of the Royal Scots at Glen-  
corse on 29th November.

The Princess Royal, Controller-Commandant, inspected units of the Auxiliary  
Territorial Service at No. 31 V.R.D. at Douglas on 25th November, and A.T.S. units at  
641 C (M) T Coy., and 5 Command Signals, Broomfield Camp, on 28th November. On  
29th November she inspected units of the A.T.S. No. 2 Lowland Group and of A.A.  
Command. On 4th December she attended a staff conference of the A.T.S. in London,  
and on 16th December an A.T.S. Conference at Headquarters, Northern Command, York.

The King has approved the following appointments :—

TO BE AIDE-DE-CAMP GENERAL TO THE KING.—General Sir Miles C. Dempsey,  
K.C.B., K.B.E., D.S.O., M.C. (14th October, 1946).

TO BE AIDES-DE-CAMP TO THE KING.—Colonel (local Major-General) A. H. Gatehouse,  
D.S.O., M.C. (14th August, 1946); Colonel W. N. Craig-McFeely (14th October, 1946).

TO BE COLONELS COMMANDANT.—Of the Royal Corps of Signals, Major-General  
Sir Leslie G. Phillips, K.B.E., C.B., M.C. (15th November, 1946); of the Royal Army  
Medical Corps, Lieut.-General Sir William P. MacArthur, K.C.B., D.S.O., O.B.E.  
(30th November, 1946); of the Corps of Royal Indian Engineers, Brigadier R. C. R. Hill,  
D.S.O., Lieut.-General Sir Francis Nosworthy, K.C.B., D.S.O., M.C., and Major-General  
H. E. Roome, C.B., C.B.E., M.C. (5th December, 1946); of the Royal Malta Artillery,  
Lieut.-General Sir Edmond Shreiber (5th December, 1946).

TO BE REGIMENTAL COLONELS.—Of The 1st The Royal Dragoons, R.A.C., Colonel  
F. W. Wilson-Fitzgerald, D.S.O., M.C.; of The Dorsetshire Regiment, Colonel (hon.  
Brigadier) C. H. Woodhouse, O.B.E., M.C. (31st October, 1946); of The Oxfordshire  
and Buckinghamshire Light Infantry, General Sir Bernard C. T. Paget, G.C.B., D.S.O.,  
M.C. (19th October, 1946); of The Royal Berkshire Regiment, General Sir Miles C.  
Dempsey, K.C.B., K.B.E., D.S.O., M.C. (22nd November, 1946); of The Rajputana  
Rifles, I.A., Colonel (temporary Major-General) T. W. Rees, C.B., C.I.E., D.S.O., M.C.,  
I.A. (4th December, 1946); of The Royal Warwickshire Regiment, Field-Marshal the  
Viscount Montgomery of Alamein, K.G., G.C.B., D.S.O. (1st January, 1947); of The  
Royal Ulster Rifles, Major-General (temporary Lieut.-General) Sir James S. Steele,  
K.B.E., C.B., D.S.O., M.C. (1st March, 1947); of The Cheshire Regiment, Colonel (hon.  
Brigadier) G. P. Harding, C.B.E., D.S.O., M.C. (14th January, 1947); of The 3rd Dragoon  
Guards, R.A.C., Colonel (hon. Brigadier) W. T. Gill, M.C. (1st December, 1946); of The  
King's Shropshire Light Infantry, Major-General J. M. L. Grover, C.B., M.C. (1st January,  
1947); of The 10th Royal Hussars, R.A.C., Major-General (hon. Lieut.-General) Sir  
Willoughby Norrie, K.C.M.G., C.B., D.S.O., M.C. (1st January, 1947).

TO BE HONORARY COLONELS.—Of The 18th Cavalry, Indian Army, Admiral Sir  
Walter H. Cowan, K.C.B., D.S.O., M.V.O. (11th November, 1946); of The 2nd Royal  
Lancers, Indian Army, Lieut.-General H. H. Maharaja Sir Sadul Singhji, G.C.I.E.,  
C.V.O., of Bikanir (14th December, 1946); of Hodson's Horse, Indian Army, Major-  
General H. H. Sir Saiyid Raza Ali Khan, G.C.I.E., K.C.S.I., Nawab of Rampur (21st  
December, 1946).

TO BE MASTER-GUNNER, ST. JAMES'S PARK.—Field-Marshal Viscount Alanbrooke,  
K.G., G.C.B., O.M., D.S.O. (5th November, 1946).

### HONOURS AND AWARDS

ORDER OF THE GARTER.—The following were included in appointments, announced  
on 3rd December, 1946, to be Knights of the Most Noble Order of the Garter :—

Field-Marshal Viscount Alanbrooke, G.C.B., O.M., D.S.O.

Field-Marshal Viscount Alexander of Tunis, G.C.B., G.C.M.G., C.S.I., D.S.O., M.C.

Field-Marshal Viscount Montgomery of Alamein, G.C.B., D.S.O.



**NEW YEAR HONOURS LIST.**—The following awards were included in the New Year Honours list of 1st January, 1947:—

*To be a Baron.*—General Sir Hastings L. Ismay, G.C.B., C.H., D.S.O.

*K.C.B.*—General Sir Montagu G. N. Stopford, K.B.E., C.B., D.S.O., M.C.; General Sir Geoffrey A. P. Scoones, K.B.E., C.B., C.S.I., D.S.O., M.C., I.A.

*C.B.*—Brigadier (temporary) G. L. Appleton, O.B.E.; Major-General (temporary) E. C. Beard, C.B.E., M.C., A.D.C.; Major-General (local) V. Blomfield, D.S.O.; Major-General (acting) A. C. T. Evanson, M.C.; Brigadier (temporary) C. G. B. Greaves, C.B.E.; Major-General J. C. O. Marriott, C.V.O., D.S.O., M.C.; Major-General E. P. Nares, C.B.E., M.C.; Major-General (temporary) W. P. Oliver, O.B.E.; Major-General (temporary) W. H. Oxley, C.B.E., M.C.; Major-General (temporary) W. M. Ozanne, C.B.E., M.C.; Major-General (temporary) C. M. Smith, C.B.E., M.C., A.M.I.Mech.E.; Major-General E. A. Sutton, C.B.E., M.C., late R.A.M.C.; Colonel V. J. E. Westropp, C.B.E.; Major-General E. N. Goddard, C.I.E., C.B.E., M.V.D., M.C., I.A.; Major-General (temporary) B. W. Key, D.S.O., M.C., I.A.; Major-General (temporary) T. Scott, I.A.; Major-General (temporary) S. F. Irwin, C.B.E., I.A.

*K.B.E.*—Lieut.-General (acting) F. E. W. Simpson, C.B., D.S.O.; Major-General (local) H. C. Cole, C.B., C.B.E., F.S.I.

*K.C.I.E.*—Lieut.-General (acting) R. A. Savory, C.B., D.S.O., M.C., I.A.

The following promotion in the Order of the Bath was announced on 1st January, 1947:—

*G.C.B.*—General Sir A. G. O. Mosley Mayne, K.C.B., C.B.E., D.S.O., A.D.C., I.A.

#### APPOINTMENTS

**UNITED KINGDOM.**—T/Major-General J. A. Baillon, C.B.E., M.C., has been appointed Commander, Aldershot and Hampshire District (November, 1946).

Brigadier F. St. D. B. Lejeune, C.B.E., has been appointed Vice-President, Ordnance Board, Ministry of Supply, with acting rank of Major-General (November, 1946).

T/Major-General G. W. Richards, C.B., C.B.E., D.S.O., M.C., has been appointed Commander, North Midland District (January, 1947).

Major-General J. C. O. Marriott, C.B., C.V.O., D.S.O., M.C., has been appointed G.O.C., London District (February, 1947).

Brigadier P. G. Calvert-Jones, C.B.E., D.S.O., M.C., has been appointed Commander, No. 4 A.A. Group (Liverpool), with acting rank of Major-General (December, 1946).

Brigadier H. J. Parham, C.B.E., D.S.O., has been appointed Commander, No. 3 A.A. Group (Edinburgh) with acting rank of Major-General (December, 1946).

T/Major-General G. C. Evans, C.B., C.B.E., D.S.O., has been appointed Commander, North-West District (January, 1947).

T/Major-General J. B. Churcher, D.S.O., has been appointed Commander, 3rd Division (January, 1947).

Major-General P. M. Balfour, C.B., C.B.E., M.C., has been appointed Commander, 2nd Division (February, 1947).

**WAR OFFICE.**—Brigadier J. E. C. McCandlish, C.B., C.B.E., has been appointed Director of Organization, with acting rank of Major-General (November, 1946).

Major-General E. C. Mansergh, C.B., C.B.E., M.C., has been appointed Director of the Territorial Army and Army Cadet Force.

**MILITARY COLLEGE OF SCIENCE.**—Major-General J. D. Shapland, D.S.O., M.C., has been appointed Commandant and Professor C. H. Landor has been appointed Dean of the Military College of Science. The latter is a new post which has been created as part of the reorganization of the Military College of Science.



R.M.A., SANDHURST.—Mr. H. H. Hardy, a former headmaster of both Cheltenham College and Shrewsbury School, has been appointed Director of Studies at the Royal Military Academy, Sandhurst. He will have under him about seventy civilian instructors.

TERRITORIAL ARMY.—Major-General R. E. Urquhart, C.B., D.S.O., has been appointed Commander of the 16th Airborne Division.

Colonel G. L. Verney, D.S.O., M.V.O., has been appointed Commander, 56th Armoured Division, with acting rank of Major-General (January, 1947).

GERMANY.—Major-General N. C. D. Brownjohn, C.B., O.B.E., M.C., has been appointed Deputy Chief of Staff (Political), Office of the Deputy Military Governor, Control Commission for Germany (October, 1946). Brigadier L. C. Manners-Smith, C.B.E., has been appointed Chief of the Inter-Services Military Exchange Commission, Soviet Zone in Germany, with acting rank of Major-General (January, 1947).

U.S.A.—Brigadier J. A. Gascoigne, D.S.O., has been appointed Deputy Commander, British Army Staff, Washington, with acting rank of Major-General (February, 1947).

INDIA.—Major-General (acting Lieut.-General) D. D. Gracey, C.B., C.B.E., M.C., I.A., has been appointed Commander, 1st Indian Corps (15th October, 1946).

Lieut.-General Sir F. W. Messervy, K.B.E., C.B., D.S.O., I.A., has been appointed G.O.C.-in-C., Northern Command (15th October, 1946).

T/Major-General G. Brunskill, C.B., M.C., has been appointed Deputy Master-General of Ordnance.

Major-General E. Wood, C.B., C.I.E., M.C., I.A., has been appointed Quartermaster-General in India (17th December, 1946).

INDIA OFFICE.—General Sir Geoffrey Scoones, K.C.B., K.B.E., C.B., C.S.I., D.S.O., M.C., I.A., has succeeded General Sir Mosley Mayne, G.C.B., C.B.E., D.S.O., A.D.C., I.A., as Principal Staff Officer and Military Adviser to the Secretary of State for India and Burma (1st January, 1947).

FUTURE APPOINTMENTS.—Lieut.-General Sir John Harding, K.C.B., C.B.E., D.S.O., M.C., is to become G.O.C.-in-C., Southern Command in July, 1947.

Lieut.-General Sir John Crocker, K.B.E., C.B., D.S.O., M.C., is to become Commander-in-Chief, Middle East, in July, 1947.

Lieut.-General Sir Sidney C. Kirkman, K.B.E., C.B., M.C., is to become Quartermaster-General to the Forces in June, 1947.

Lieut.-General K. N. Crawford, C.B., M.C., is to become Deputy Chief of Imperial General Staff in June, 1947.

Major-General Sir Reginald F. S. Denning, K.B.E., C.B., is to become Major-General i/c Administration, Eastern Command in March, 1947.

#### PROMOTIONS

The following promotions have been announced:—

*Generals.*—The following Lieut.-Generals to be Generals:—Sir Montagu G. N. Stopford, K.B.E., C.B., D.S.O., M.C. (30th October, 1946, with seniority 1st October, 1946); Sir William D. Morgan, K.C.B., D.S.O., M.C. (23rd November, 1946, with seniority 7th November, 1946).

*Lieut.-Generals.*—The following Major-Generals (temporary Lieut.-Generals) to be Lieut.-Generals:—G. I. Thomas, C.B., D.S.O., M.C. (30th October, 1946, with seniority 30th July, 1944); Sir Charles W. Allfrey, K.B.E., C.B., D.S.O., M.C. (23rd November, 1946, with seniority 14th December, 1944); Sir James S. Steele, K.B.E., C.B., D.S.O., M.C. (3rd January, 1947, with seniority 25th December, 1944).



The following Major-Generals to be acting Lieut.-Generals :—F. R. R. Bucher, C.B., O.B.E., M.C., Indian Army (4th August, 1946) ; E. Wood, C.B., C.I.E., M.C., I.A. (17th December, 1946).

*Major-Generals.*—The following Colonels (temporary Major-Generals) to be Major-Generals :—G. H. A. MacMillan, C.B., C.B.E., D.S.O., M.C. (30th October, 1946, with seniority 27th December, 1944) ; C. M. Smith, C.B.E., M.C. (23rd November, 1946, with seniority 28th December, 1944) ; R. N. Gale, C.B., D.S.O., O.B.E., M.C. (4th December, 1946, with seniority 5th January, 1945) ; C. B. Callander, C.B., M.C. (12th December, 1946, with seniority 13th January, 1945) ; R. K. Arbuthnott, C.B., C.B.E., D.S.O., M.C. (22nd December, 1946, with seniority 27th March, 1945) ; E. C. Mansergh, C.B., C.B.E., M.C. (24th December, 1946, with seniority 26th April, 1946) ; S. B. Rawlins, C.B., C.B.E., D.S.O., M.C. (27th December, 1946) ; V. Eveleigh, C.B., D.S.O., O.B.E. (29th December, 1946, with seniority 19th July, 1944) ; W. R. Revell-Smith, C.B., C.B.E., D.S.O., M.C., A.M. (3rd January, 1947, with seniority 16th January, 1945) ; H. L. Longden, C.B.E. (16th January, 1947, with seniority 30th January, 1945).

The following Lieut.-Colonel (acting Major-General) to be temporary Major-General :—C. D. Packard, C.B.E., D.S.O. (11th September, 1946).

The following Colonels (temporary Brigadiers) to be acting Major-Generals :—H. Essame, C.B.E., D.S.O., M.C. (21st November, 1946) ; K. C. Davidson, M.C. (6th November, 1946).

War Subs. Lieut.-Colonel (temporary Brigadier) R. Edgeworth-Johnstone is granted the local rank of Major-General (1st October, 1946).

#### RETIREMENTS

The following General Officers have retired :—General Sir Alan G. Cunningham, K.C.B., D.S.O., M.C. (30th October, 1946) ; General Sir H. Colville B. Wemyss, K.C.B., K.B.E., D.S.O., M.C. (23rd November, 1946) ; Major-General J. F. Evetts, C.B., C.B.E., M.C., with hon. rank of Lieut.-General (4th December, 1946) ; Major-General R. K. Ross, C.B., D.S.O., M.C. (12th December, 1946) ; Major-General R. E. Barnsley, C.B., M.C., M.B., K.H.S., late R.A.M.C. (19th December, 1946) ; Major-General G. C. Kemp, C.B., M.C. (22nd December, 1946) ; Major-General N. A. Coxwell-Rogers, C.B., C.B.E., D.S.O., (24th December, 1946) ; Major-General Sir N. G. Holmes, K.B.E., C.B., M.C. (27th December, 1946) ; Major-General Sir Frederick E. Morgan, K.C.B., with hon. rank of Lieut.-General (29th December, 1946) ; Lieut.-General Sir Edmond Schreiber, K.C.B., D.S.O. (3rd January, 1947) ; Major-General C. W. Toovey, C.B., C.B.E., M.C., (8th January, 1947).

#### DESPATCHES

*NORTH-WEST AFRICA.*—A Despatch submitted to the Secretary of State for War on 7th June, 1943, by Lieut.-General K. A. N. Anderson, C.B., M.C., G.O.C.-in-C. First Army, describing operations in North-West Africa from 8th November, 1942, to 13th May, 1943, was published in the *London Gazette* of 6th November, 1946.

*MIDDLE EAST.*—A Despatch submitted on 31st August, 1944, by General Sir H. Maitland Wilson, G.C.B., G.B.E., D.S.O., Commander-in-Chief, The Middle East Forces, describing operations in the Middle East from 16th February, 1943, to 8th January, 1944, was published in the *London Gazette* of 13th November, 1946.

#### ROYAL CORPS AND REGIMENTS

It was announced on 10th December, 1946 that in recognition of their past services the King has approved that the following regiments and corps shall in future enjoy the distinction of "Royal," their new titles being :—

The Royal Lincolnshire Regiment.

The Royal Leicestershire Regiment.



The Royal Hampshire Regiment.  
 Royal Army Educational Corps.  
 Royal Army Dental Corps.  
 Corps of Royal Military Police.  
 Royal Pioneer Corps.

His Majesty has approved that the facings of these regiments and corps shall be as follows :—

The Royal Lincolnshire Regiment.—To change from white to royal blue.  
 The Royal Leicestershire Regiment.—To retain pearl grey.  
 The Royal Hampshire Regiment.—To retain yellow.  
 Royal Army Educational Corps.—To change from Cambridge blue to royal blue.  
 Royal Army Dental Corps.—To change from emerald green to royal blue.  
 Corps of Royal Military Police.—To retain scarlet.  
 Royal Pioneer Corps.—To adopt royal blue.

#### TERRITORIAL ARMY

Information issued up to the time of writing regarding the future of the Territorial Army is briefly as follows :

This Army is to be reconstituted during the year and will later include a compulsory element, but that element will not apply to it in 1947, since the first batch of men who have undergone eighteen months' service in the Regular forces will not then have completed that service.

There are to be nine Territorial divisions—one airborne, two armoured and six infantry divisions. In addition, there are to be independent infantry and armoured brigades, artillery and engineer formations, and Corps and Army troops.

The infantry divisions will be the 42nd Lancashire, 43rd Wessex, 44th Home Counties, 50th Northumbrian, 51st/52nd Scottish, and 53rd Welsh. The 49th West Riding and 56th London Divisions, formerly infantry, become armoured. The airborne division is to be numbered 16th; it will not be a Territorial division in the original sense, since its units will extend throughout the country.

In 1939 there were five anti-aircraft divisions. Now, Anti-Aircraft Command is being reorganized into five groups, each containing both Regular and Territorial brigades.

Northern Ireland will raise a Territorial force, including an infantry brigade, but on a purely voluntary basis.

The T.A. divisions, except two divisions with their headquarters in London, will be commanded by the Major-Generals commanding the local districts. Brigade and similar commanders will be Territorial or other officers not on the active list of the Regular Army, wherever suitable officers were available and willing to accept those appointments.

Commanding officers of units will generally be non-Regular officers, and Regular officers would as a rule be given command only when non-Regulars could not be obtained.

Some staff officers will be needed at once for the T.A. Their duties would correspond with those of staff officers in similar appointments in the Regular Army, and they will in nearly all cases be Regular officers. Regular officers will also be provided as adjutants and quartermasters of units. Suitable non-Regular officers who are available and willing to serve might, however, be appointed when Regular officers are not available.

Territorial Army regiments of the Royal Armoured Corps are to be affiliated with Regular regiments. The approved affiliations are given below, the role of the T.A. regiment being indicated by a number in brackets (see note below) :—

#### REGULAR REGIMENTS

#### AFFILIATED TERRITORIAL REGIMENTS

Life Guards ... ..	} Inns of Court Regiment <sup>1</sup>
Royal Horse Guards (The Blues) ...	



## REGULAR REGIMENTS

## AFFILIATED TERRITORIAL REGIMENTS

1st King's Dragoon Guards...	...	North Irish Horse <sup>1</sup>
Queen's Bays (2nd Dragoon Guards)	...	City of London Yeomanry (Roughriders) <sup>3</sup>
3rd Carabiniers (Prince of Wales's Dragoon Guards) ...	...	1st East Riding of Yorkshire Yeomanry <sup>3</sup>
4th/7th Royal Dragoon Guards ...	...	Scottish Horse <sup>3</sup>
5th Royal Inniskilling Dragoon Guards ...	...	Cheshire Yeomanry (Earl of Chester's) <sup>3</sup>
1st The Royal Dragoons ...	...	1st Fife and Forfar Yeomanry <sup>1</sup>
Royal Scots Greys (2nd Dragoons)...	...	Ayrshire Yeomanry (Earl of Carrick's Own) <sup>2</sup>
3rd The King's Own Hussars ...	...	Queen's Own Royal Glasgow Yeomanry <sup>3</sup>
4th Queens' Own Hussars ...	...	North Somerset Yeomanry <sup>3</sup> (Airborne)
7th Queen's Own Hussars ...	...	Shropshire Yeomanry <sup>3</sup>
8th King's Royal Irish Hussars ...	...	Leicestershire Yeomanry (Prince Albert's Own) <sup>2</sup>
9th Queen's Royal Lancers ...	...	Yorkshire Hussars (Alexandra, Princess of Wales's Own) <sup>2</sup>
10th Royal Hussars (Prince of Wales's Own)	...	1st Northamptonshire Yeomanry <sup>3</sup>
11th Hussars (Prince Albert's Own)	...	Lanarkshire Yeomanry <sup>2</sup>
12th Royal Lancers (Prince of Wales's)	...	Yorkshire Dragoons (Queen's Own) <sup>2</sup>
13th/18th Royal Hussars (Queen Mary's Own) ...	...	Royal Wiltshire Yeomanry (Prince of Wales's Own) <sup>3</sup>
14th/20th King's Hussars ...	...	1st Royal Gloucestershire Hussars <sup>1</sup>
15th/19th King's Royal Hussars ...	...	1st Derbyshire Yeomanry <sup>1</sup>
16th/5th Lancers ...	...	Warwickshire Yeomanry <sup>2</sup>
17th/21st Lancers ...	...	Duke of Lancaster's Own Yeomanry <sup>3</sup>
1st Royal Tank Regiment ...	...	Northumberland Yeomanry <sup>3</sup>
2nd Royal Tank Regiment ...	...	Staffordshire Yeomanry (Queen's Own Royal Regiment) <sup>2</sup>
3rd Royal Tank Regiment	...	Nottinghamshire Yeomanry (Sherwood Rangers) <sup>2</sup>
4th Royal Tank Regiment	...	40th (The King's) Royal Tank Regiment <sup>2</sup>
5th Royal Tank Regiment	...	2nd County of London Yeomanry (Westminster Dragoons) <sup>2</sup>
6th Royal Tank Regiment	...	3rd County of London Yeomanry (Sharpshooters) <sup>2</sup>
7th Royal Tank Regiment	...	41st (Oldham) Royal Tank Regiment <sup>2</sup>
8th Royal Tank Regiment	...	1st Lothians and Border Horse <sup>2</sup>
	...	44th Royal Tank Regiment <sup>4</sup>
	...	45th (Leeds Rifles) Royal Tank Regiment <sup>2</sup>
	...	43rd Royal Tank Regiment <sup>2</sup>
	...	42nd Royal Tank Regiment <sup>2</sup>

<sup>1</sup> Armoured car regiment; <sup>2</sup> Armoured regiment; <sup>3</sup> Divisional regiment, R.A.C.;

<sup>4</sup> Armoured replacement group.

## ARMY CADET FORCE

Speaking at Cambridge on 3rd January, Lord Pakenham, Under-Secretary of State for War, emphasized the importance which the Government attach to the Cadet Force, because they recognized the admirable work of all ranks in pre-Service training and in preparation for citizenship and leadership. It was intended that the Force would be linked as closely as possible to the Territorial Army.

## CANADA

## APPOINTMENT

Brigadier H. D. Graham has been appointed head of the Canadian joint liaison staff and military adviser to the Canadian High Commissioner in London.



**NEW ZEALAND**

**HONOURS AND AWARDS.**—Awards in the New Year Honours list of 1st January, 1947, included :—

*C.B.*—Brigadier K. L. Stewart, C.B.E., D.S.O., New Zealand Staff Corps.

**SOUTH AFRICA**

**HONOURS AND AWARDS.**—Awards in the New Year Honours list of 1st January, 1947, included :—

*O.M.*—Field-Marshal the Right Hon. J. C. Smuts, C.H., F.R.S.

**INDIA****NATIONALIZATION OF INDIAN FORCES**

On 13th November, 1946, the Government of India announced the appointment of a committee of eight, with Sir Gopalaswami Ayengar as chairman, to advise the Government on ways and means of nationalizing the armed forces. The committee includes three senior Indian officers, representing the three Services, and one senior British Service officer.

The terms of reference are as follows :—"To nationalize the armed forces of India within the shortest possible time, with due regard to Indian national interests and reasonable efficiency, and to devise and report within six months on : (a) ways and means within the minimum possible period of replacing non-Indian personnel by Indians in each branch or service ; (b) target dates for complete nationalization for each category in different services ; (c) ways and means of retaining, if necessary, non-Indian personnel as advisers or experts in nationalized categories ; and (d) enumeration of departments, categories, or personnel where non-Indian personnel can be replaced by Indian immediately."

**FOREIGN COUNTRIES****FRANCE**

**VISIT TO ENGLAND.**—General de Lattre de Tassigny, Chief of Staff of the French Army, paid a short visit to England last November. He spent a day at Aldershot seeing different aspects of the training of the British soldier, and also visited the Staff College at Camberley.

**U.S.S.R.**

**COMMANDER-IN-CHIEF.**—The Army newspaper *Red Star* announced on 18th November last that Marshal Konev had been appointed Commander-in-Chief of the Soviet Army.

Generalissimo Stalin is Commander-in-Chief of all the armed forces and Head of the Ministry which co-ordinates them.



## AIR NOTES GREAT BRITAIN

### H.M. THE KING

The King has been graciously pleased to appoint Air Vice-Marshal Sir Paul Copeland Maltby, K.B.E., C.B., D.S.O., A.F.C., to be Sergeant-at-Arms in Ordinary to His Majesty, to attend the Right Hon. the Lord Chancellor, Lord Keeper, or Lord Commissioner for the Great Seal of Great Britain for the time being, in the room of Admiral the Hon. Sir Herbert Meade-Fetherstonhaugh, G.C.V.O., C.B., D.S.O., resigned; the appointment to date from 2nd December, 1946.

The King has approved the reconstitution of the King's Flight of the Royal Air Force and the reappointment of Air Commodore E. H. Fielden as Captain of the King's Flight. The Flight is based at the R.A.F. Station, Benson, Oxford, and Viking aircraft have been allocated for its equipment. Two Vikings have been prepared for the personal use of their Majesties. The Flight was to leave for South Africa towards the end of January to be at Capetown when the Royal party arrived.

The King also approved a recommendation that four cadets of the Air Training Corps should serve in aircraft of the King's Flight during the Royal tour in South Africa. The cadets will be employed as assistant stewards and on other duties at the discretion of the Captain of the Flight.

### APPOINTMENTS

The Air Ministry announced on 12th December that Air Marshal Sir Roderic Hill had been appointed to the new post on the Air Council of Air Member for Technical Services, which had been created to take charge of a new Air Ministry department which will be responsible for all aspects of the technical work of the R.A.F., and in particular the building up of the technical branch as a unified section. The post of Air Member for Training, created during the War, has been discontinued; responsibility for flying training will be assumed by the Air Staff and for technical training by the new department. Air Marshal Sir Roderic Hill had been Air Member for Training since May, 1945.

Air Vice-Marshal F. J. W. Mellersh has been appointed Air Officer Commanding No. 91 (Bomber) Group.

Air Commodore T. E. Drowley has been appointed Director-General of Equipment, Air Ministry, with effect from 16th December, and with the acting rank of Air Vice-Marshal.

Air Vice-Marshal A. C. Sanderson has been appointed Air Officer Commanding, Air Headquarters, Burma.

Air Vice-Marshal H. S. P. Walmsley has been appointed Air Officer Commanding-in-Chief, Air Headquarters, India, with effect from 22nd October, 1946, and with the acting rank of Air Marshal.

Air Vice-Marshal H. B. Russell has been appointed Air Officer in Charge of Administration, Headquarters, Flying Training Command.

Air Commodore A. L. A. Perry-Keene has been appointed Air Officer in charge of Administration, Air Headquarters, India, with the acting rank of Air Vice-Marshal.

Air Vice-Marshal R. S. Blucke has been appointed Senior Air Staff Officer, Air Headquarters, India.

Air Vice-Marshal V. E. Groom has been appointed Director-General of Manning, Air Ministry, with effect from 1st January.



## PROMOTIONS

Group Captain to Air Commodore (temporary), 1st November, 1946, with seniority, 1st January, 1946 :—

A. G. Bishop, C.B.E., A.F.C., G. E. Nicholetts, A.F.C.  
Acting Rank (*see* Appointments).

## RETIREMENTS

Air Vice-Marshal Sir Paul C. Maltby, K.B.E., C.B., D.S.O., A.F.C (2nd October, 1946).

*Reversion to Retired List.*—Air Commodore (temporary Air Vice-Marshal) W. F. MacNeece Foster, C.B., C.B.E., D.S.O., D.F.C., retaining the rank of Air Vice-Marshal (3rd October, 1946).

## HONOURS AND AWARDS

*Victoria Cross—*

It was announced on 11th October that the King had approved the award of the Victoria Cross to—

*Pilot Officer Andrew Charles Mynarski* (deceased), R.C.A.F., No. 419 Squadron (R.C.A.F.).

Pilot Officer Mynarski was the mid-upper gunner of a Lancaster aircraft detailed to attack a target at Cambrai, France, on the night of 12th June, 1944. The aircraft was attacked by an enemy fighter and ultimately came down in flames. The flames soon became fierce and the captain ordered the crew to abandon the aircraft.

Pilot Officer Mynarski left his turret and went towards the escape hatch. He then saw that the rear gunner was still in his turret and apparently unable to leave it. Without hesitation he made his way through the flames in an endeavour to release the gunner. Whilst so doing, his parachute and his clothing up to the waist were set on fire. All his efforts to move the turret and free the gunner were in vain. Eventually the rear gunner clearly indicated to him that there was nothing more he could do and that he should try to save his own life. Pilot Officer Mynarski reluctantly went back through the flames to the escape hatch. There, as a last gesture to the trapped gunner, he turned towards him, in his flaming clothing, and saluted before jumping out of the aircraft. He was found eventually by the French, but was so severely burnt that he died from his injuries.

The rear gunner had a miraculous escape when the aircraft crashed. He subsequently testified that, had Pilot Officer Mynarski not attempted to save his comrade's life, he could have left the aircraft in safety and would, doubtless, have escaped death.

*George Cross—*

It was announced on 5th November that the King had approved the posthumous award of the George Cross to—

*Sergeant Arthur Banks*, R.A.F.V.R., No. 112 Squadron, Desert Air Force.

On 29th August, 1944, Sergeant Banks took part in an armed reconnaissance of the Ravenna and Ferrara areas. During the sortie his aircraft was damaged and he was compelled to make a forced landing. He made contact with a group of Italian partisans and became an outstanding figure, advising and encouraging them in action against the enemy.

Early in December, 1944, while attempting to cross into Allied territory by boat, he and a number of partisans were surrounded and captured. He was handed over to the German commander of the district. During the latter's interrogation he was cruelly tortured.



On 19th December he was handed over to the commander of a detachment of the "Black Brigade" and transferred to another prison at Ariano Polesine, where he was again tortured. Eventually he was bound and thrown into the River Po. In spite of his wounds he succeeded in reaching the river bank. The Fascists then took him back to the prison, where he was shot through the head.

Sergeant Banks endured much suffering with stoicism, withholding information which would have been of vital interest to the enemy. His courage and endurance were such that they impressed even his captors.

#### ORDER OF THE GARTER

It was announced in *The London Gazette* on 3rd December that the King had appointed the following officer (among others) to be a Knight of the Most Noble Order of the Garter:—

Marshal of the Royal Air Force Viscount Portal of Hungerford, G.C.B., O.M., D.S.O. M.C.

#### NEW YEAR HONOURS

The following were included in the New Year Honours conferred by the King:—

*K.C.B. (Military).*—Air Vice-Marshal Alfred C. Collier (Retired), Air Vice-Marshal Douglas Harries (Retired).

*C.B. (Military).*—Air Vice-Marshal T. E. Drowley, Air Vice-Marshal L. F. Pendred, Air Commodore C. W. Busk, Air Commodore W. E. Staton, Air Commodore F. Whittle, Air Commodore G. B. Beardsworth, Group Captain R. J. Rodwell.

*K.B.E. (Military).*—Air Vice-Marshal C. W. Meredith, Southern Rhodesian Air Force

*C.B.E. (Military).*—Air Commodore E. J. D. Townesend (Retired), Air Commodore H. O. Clarke, F.R.C.S., R.A.F.V.R., Group Captain E. A. Beaulah, R.A.F.O., Group Captain J. B. F. Hawkins, R.A.F.O.

#### AIR OFFICERS' TOURS

Marshal of the Royal Air Force Lord Tedder made a tour of R.A.F. bases overseas, including the Far East, between mid-November and mid-December.

Air Marshal Sir Leonard Slatter, Commanding-in-Chief, Coastal Command, returned at the end of October from a visit to the Middle East and the South African Air Force.

#### AIR CO-OPERATION WITH U.S.A.A.F.

On 1st January, the Air Ministry announced that an agreement had been reached with the United States authorities covering the exchange of officers between the Royal Air Force and the United States Army Air Force as students on courses or on attachment to commands and staff posts. The training given under this agreement will cover staff methods, tactics, equipment and research. The number of officers to be exchanged will initially be about thirty or forty on each side, which may later be increased to not more than a hundred.

A spokesman of the United States Army Air Force stated in Washington that the agreement contemplated no expansion of war-time co-operation, but ensured that that co-operation would continue uninterrupted. The exchange of officers would be made on a fairly high level.

#### PERSONNEL

**NEW BRANCHES.**—Four new branches—Aircraft Control, Catering, Provost, and Physical Fitness, have been established from 1st January, and will provide further opportunities for airmen to achieve Commissioned rank and longer careers in the Service. Except in the Aircraft Control branch, which will absorb certain flying personnel, the new branches will also provide opportunities for short service Commissions. Ex-regular airmen with emergency Commissions may apply for transfer to one or other of the new



branches. A high proportion of the posts in the air traffic control organization will be filled by General Duties officers, usually chosen from long service aircrew of the pilot and navigator categories. Airmen cooks who hold the diploma of the City and Guilds advanced cookery course will be an important source for recruiting permanent officers for the Catering branch. Provost officers will be mainly recruited from airmen R.A.F. police. Physical Fitness officers will be mainly recruited by direct entry from civil life to short service Commissions.

**RETURN TO FLYING DUTIES.**—The Air Ministry announced on 3rd November that pilots and air crews who had been declared redundant and afterwards accepted for extended service in the R.A.F. would be recalled to flying duties with as little delay as possible. Pilots with flying experience in front line aircraft or as flying instructors and who had been off flying not longer than three months were being recalled to flying duties immediately. The same applied to air crew categories if they had been off flying for not more than six months. Those who had been off flying for longer periods or who had never had squadron or instructor experience would need further training. Once a man's application for extended service has been finally approved, an assessment is made of the refresher training he needs, and his name is then placed on the list of those awaiting entry to that particular stage of training.

**RECRUITING PROGRESS.**—Speaking in London on 12th November, Air Chief Marshal Sir Philip Joubert, Director of Public Relations, Air Ministry, said he was perfectly happy for the future four years hence because a reasonable number of volunteers were being entered straight from civil life. In the immediate future, however, there was a desperate shortage of trained men, because between 1939 and 1945 there was a complete gap in the recruitment of regulars. He added: "We want the 'old sweats' back and we want them badly."

Results of the first six months of the recruiting campaign were given in Parliament on 5th December. Commenting on these figures at the Air Ministry, Sir Philip Joubert said that the campaign had been a success on the direct entry side, but the bounty scheme had not been as successful as had been hoped. The rate of direct recruitment was equivalent to an annual entry of more than 30,000—the total strength of the R.A.F. in 1934. What was now needed was the replacement of the R.A.F.'s hard core, which had been whittled away during six years of war. There was an "ugly gap" to be filled, and unless they could have more recruits on bounty engagements they would in two or three years time find themselves without enough trained technicians.

#### AUXILIARY AIR FORCE

Recruiting for the reconstituted Auxiliary Air Force was opened on 9th November. The force will include twenty squadrons, four of light bombers, thirteen of day fighters, and three of night fighters, and will be part of the first line strength of the R.A.F. Only those who served in the Air Force during the War are at present eligible for membership of the A.A.F. Officers will be commissioned for five years, and airmen will be enlisted for four years. About half the flying members of each squadron will be commissioned. To qualify for a retaining fee, pilots and navigators must each year have 15 days' continuous training, 100 hours' non-continuous training in the evenings, and 12 week-ends. Training must include 125 hours' flying. The annual retaining fee is £35. In addition, normal service rates will be paid for the annual camp and other periods of continuous training of more than 48 hours. For shorter periods there is a training expenses allowance of 1s. 6d. an hour, with a maximum of 9s. a day. Travelling expenses are also paid. During the annual camp and for unbroken training periods of over 48 hours pay will be at normal rates, with an expenses allowance for shorter periods.

Further details of the Auxiliary and Reserve Forces of the R.A.F. were given by the Under-Secretary of State for Air, Mr. Geoffrey de Freitas, on 20th November to the Council of the County Territorial and Auxiliary Forces Associations at Middlesex Guildhall. He said that the inevitably severe restrictions of the Air Council's plan for



a relatively small regular Air Force made it all the more important that adequate and sufficient support and reinforcement should be available from the Auxiliary and Reserve Forces. The structure would be threefold and would include:—

Non-regular units capable of taking their place at the very outset of an emergency in the fighting Air Force. Such units would be Auxiliary Air Force units.

The general body of the Reserves.

Pre-entry training units at the Universities and the Air Training Corps.

The task which the Air Council would ask the Associations to discharge would be larger than before 1939. Hitherto only 26 Associations had been joint Associations, but in future all the Associations would be asked to undertake responsibilities on behalf of the Air Ministry to a greater or lesser extent.

#### UNIVERSITY AIR SQUADRONS

Eleven University Air Squadrons are now in being under a new scheme which was inaugurated with the beginning of the academic year in October. The squadrons are at Aberdeen, Belfast, Birmingham, Cambridge, Edinburgh, Glasgow, London, Manchester, Nottingham, Oxford and Southampton. The squadrons will be run by the Reserve Command, R.A.F., and the scheme is designed for two classes of students—old R.A.F. pilots and those who have not served in any of the armed forces. Members will be required to complete at least 20 hours' flying training a year in term time and 15 days' continuous training during vacation at an R.A.F. station.

#### ROYAL OBSERVER CORPS

The Royal Observer Corps has been reorganized on a peace-time basis from 1st January. Mr. Herbert Morrison, Lord President of the Council, in a talk on the B.B.C. Home Service on 16th November, invited war-time Observers to re-enrol in the Corps. He said that as Minister of Home Security during the War he was able to see at close quarters the quiet and courageous efficiency with which the Corps carried out its many and varied duties. Its assistance was invaluable to the R.A.F. and to the defence of the country as a whole. It was these same men and women who were wanted in re-forming the Corps.

A nucleus of permanent officers is being provided and 28,500 spare-time volunteers will be enrolled. Initially, these volunteers will be drawn only from men and women with war-time experience in the Corps. A regular training programme is being provided for all volunteers, including practice plotting, aircraft recognition, and occasional co-operation exercises with R.A.F. aircraft.

#### DOMINIONS AND COLONIES

##### AUSTRALIA

The Department of Aircraft Production handed over to the R.A.A.F. in November the first Australian-built Avro Lincoln heavy bomber. Five previously delivered to the R.A.A.F. were partly built from imported parts, but from now on the only imports in new Lincolns will be Rolls-Royce Merlin engines. Of 73 Lincolns ordered, 11 were due for completion by the end of 1946 and the remainder at the rate of three every two months. The Department has also begun the production of 12 Tudor transports for the R.A.A.F.

A No. 100 Squadron Association has been formed in Australia to keep and foster friendships among those who were members of this squadron in the War. The Association is anxious to get into touch with any members of the R.A.F. who served with No. 100 Squadron in Malaya and the Islands and Australia. The Honorary Secretary is Mr. Robert J. Gow, 14, Athol Street, Coogee, Sydney, Australia.



**CANADA**

The Canadian Air Ministry has been incorporated in the Department of Defence (see "General Service Notes").

Victoria Cross award (see "Honours and Awards").

The Royal Canadian Air Force Women's Division, many of whose members served in London during the War, was disbanded on 31st December.

**NEW ZEALAND**

Mosquito aircraft are being supplied by the United Kingdom to re-equip squadrons of the Royal New Zealand Air Force. The first ten new Mosquitoes left Pershore, Worcestershire, in December. The rest of the 80 aircraft, 20 new and 50 reconditioned, are being ferried at monthly intervals in batches of ten.

In order to perpetuate the name of No. 75 (New Zealand) Squadron, R.A.F., which served with distinction in the War, an Air Ministry suggestion that this number should be adopted by the R.N.Z.A.F. for one of its regular post-war squadrons has been accepted.

**SOUTH AFRICA**

A mission from the R.A.F. Central Bomber Establishment, Marham, Norfolk, left on 6th January, headed by the Commandant, Air Commodore G. R. Spencer, for South Africa, to discuss bomber tactics with the South African Air Force.

**FOREIGN****CHINA**

Control of the Armed Forces in China is vested in the Ministry of National Defence, of which General Chiang Kai-shek is the head.

The Chinese Air Force, never very large, suffered heavily at the hands of the Japanese. Its organization, according to Western standards, was poor, but efforts have been made to re-organize and re-equip it with Allied assistance. Its present headquarters is at Nanking, with General Chow-Chih-Jou as Commander-in-Chief.

**U.S. ASSISTANCE.**—American air assistance for China started with the American Volunteer Group (Flying Tigers). This group, which was independent of the Chinese Air Force, was recruited in the United States by Colonel (now General) Chennault, who commanded it. It was originally under contract to the Chinese Government to protect the Burma Road and the assembly plants on the Burmese border.

**ACTIVITIES IN BURMA.**—Until July 4th, 1942, when the American Volunteer Group was disbanded and absorbed into the U.S. Army Air Force as the 23rd Fighter Group of the Air Task Force operating in China, it had been completely self-contained and was equipped with Curtiss P-40's single seat fighters.

When the Japanese invaded Burma the Group took an active part in assisting British units in the delaying action, conducting operations into Indo-China, Siam and occupied China. Up to the time of disbandment the A.V.G. had destroyed 284 Japanese aircraft and probably damaged as many more. The personnel of the Group never numbered more than 250.

The American Army Air Forces in China were steadily built up, and in March, 1943, the Air Task Force, already referred to, was constituted as the 14th Air Force under the command of Brigadier-General Chennault. This Air Force, under the administrative control of the Commanding General, India, Burma and China, comprised a well balanced force of fighter, bomber-attack and transport units with ancillary services.

**CZECHOSLOVAKIA**

The Czechoslovak Air Force, which is subordinated to the Army, has just been reorganized and it has become evident that, if anything, the reorganization has followed



Soviet lines, the Air Force being divided into Air Commands, and these again subdivided into Air Divisions, and further still into Air Regiments.

**EQUIPMENT.**—The equipment has been obtained from Britain and the U.S.S.R. together with a few captured German aircraft, and, as the majority of these aircraft are Russian, it is reasonable to suppose that in the future the Russians will supply the greater part of the aircraft required by the Czechoslovak Air Force in spite of the very fine display put up by the R.A.F. team at the Air Display at Ruzyně, when the superiority of British aircraft was fully demonstrated.

Since the Czechoslovak Air Force is leaning towards the East we can expect that its future role will be that of close support to the ground forces and that fighters and fighter-bombers will predominate.

### EGYPT

The Royal Egyptian Air Force was founded in 1932. Command of the Force was initially in the hands of seconded R.A.F. Officers and N.C.O's, and the total strength was two R.A.F. and six Egyptian Officers, six R.A.F. N.C.O's and forty Egyptian military and civilian mechanics. The aircraft at the disposal of the R.E.A.F. consisted of five De Havilland Moths.

This arrangement lasted until early in 1937 when, under the terms of the Anglo-Egyptian Treaty of 1936, command was assumed by an Egyptian officer. The R.A.F. personnel were absorbed into the British Military Mission and continued to work with the R.E.A.F. as advisers and instructors.

The R.E.A.F. is an independent organization, and the Director, Major-General Metwalli Pasha, is directly responsible to the Minister of Defence. However, the Force relies upon the Army for certain ancillary services; and the Army Staff exercises a certain degree of operational control over it.

Its functions include air defence, army support and co-operation with the Frontier Brigade in anti-smuggling patrols.

The R.E.A.F., which has its Air Headquarters located at Almaza, near Cairo, is organized in five operational squadrons and one communications squadron (which includes the King's Flight), as follows:—

No. 1 (Fighter/Reconnaissance) Squadron ...	Hurricane.
No. 2 (Fighter) Squadron ... ..	Hurricane.
No. 3 (Communications) Squadron ... ..	Anson, Dakota.
No. 4 (General Reconnaissance) Squadron ...	Anson.
No. 5 (Fighter) Squadron ... ..	Gladiator.
No. 6 (Fighter) Squadron ... ..	Spitfire.

No 2 and No. 6 Squadrons are located at Helwan and the remainder at Almaza.

### RUSSIA

**ALLIES' ASSISTANCE.**—Among the mass of war material and thousands of planes supplied to Russia under lease-lend, were 15 squadrons of fully-equipped Catalinas. The crews for these machines were trained in the United States. The equipment included the famous Norden bomb-sight and the latest airborne radar. All types of American and British airborne and ground radar were supplied to the Russians, and Russian crews were trained in England on the maintenance and operation of these sets.

**AIRSHIPS.**—The Russians have one type of semi-dirigible "Pobeda" already in use as an air transport. Production is about to commence on a second type, the "Patriot." This airship can be controlled by one pilot instead of the usual three or four. It is powered by two air-cooled engines of 145 h.p. with a reported speed of 100 k.p.h. and an endurance of fourteen hours. It can carry 10-12 passengers.



## UNITED STATES

**NEW PRODUCTION.**—The majority of the principal aircraft firms are heavily engaged in experimental work on jet-propelled aircraft, whilst carrying out at the same time sizeable production orders for both civil and military aircraft.

The Lockheed Company are reported to be turning out three P-80 Shooting Stars every two days on its present A.A.F. contract, which will take until the end of 1947 to complete. P-80's are already in squadron service in the A.A.F. and have appeared in both the European and Pacific Theatres. In addition, Lockheeds are constructing for the Navy over 100 P2V Neptunes, one of this type at present holding the World's long distance flight record of 11,236 miles (Perth, Australia, to Columbus, Ohio) set up in September of last year. On the experimental side, Lockheed's main interest appears to be centred in the two latest U.S. Navy transport aircraft which they are building. The first of these two 180-passenger R-60 "Constitutions" has already successfully completed its first test flight.

The Consolidated Vultee Aircraft Company is building a small number of P-81 turbo-jet fighter aircraft and all-metal L-13 liaison and ambulance aircraft. They are also going ahead with a production order for 100 of the latest A.A.F. super-heavy bombers, the B-36. Concurrently they are developing for the A.A.F. the 200-passenger troop transport, the XC-99, which has the same wing as the B-36 but a double-decked fuselage, and also a secret new twin-engine jet bomber, the XB-46.

The North American Aviation Company are busy on an A.A.F. order for 250 P-82 Twin Mustangs which it is anticipated will take, at the present rate of production, about one and a half years to complete. On the experimental side they are engaged in developing the XB-45, believed to be a four-engine jet-bomber, and also a new jet-fighter for the A.A.F. and the Navy. The Navy version—the XFJ-1, which was recently test flown in California, is supposed to be capable of 630 m.p.h. and is therefore a possible contender for an attack on the world's air speed record. The A.A.F. version will be known as the XP-86.

The Douglas Aircraft Company are completing a sizeable order for the U.S. Navy for BT2D-1 "Skyraiders" dive bombers. Main preoccupation of Douglas's during the last year has been with the XB-42 "Mixmaster," a medium bomber, which although it has already flown, has not proved to be successful. It is believed that an experimental jet version of the XB-42 is being contemplated and that experiments are being carried out with a very secret supersonic aircraft of radical design.

Northrop's, whilst working on a production order for the new A.A.F. fast, long-range photo-reconnaissance aircraft, the F-15, are endeavouring to overcome the teething troubles of the A.A.F.'s new Flying Wing bomber, the XB-35. This aircraft has recently successfully passed its first trial flights and the A.A.F. have placed an order for 15.

**ATOM-BOMB AIRCRAFT.**—The Boeing Aircraft Company are believed to have an order from the A.A.F. for over 60 of their new B-50 heavy bombers. This aircraft has been developed from the B-29 and is similar to it in appearance, but is of lighter construction and has more powerful engines. First deliveries of the B-50, which has been specifically designed for carriage of the Atomic Bomb, are expected to take place early in 1947.



## REVIEWS OF BOOKS

### GENERAL

**Armament and History.** By Major-General J. F. C. Fuller. (Eyre and Spottiswoode.) 12s. 6d.

This is described as "A Study of the Influence of Armament on History from the Dawn of Classical Warfare to the Second World War." The sub-title naturally calls to mind Mahan's *Influence of Sea Power on History*, and it is no disparagement of the latter to say that, in the present year of grace, General Fuller's new book is the more valuable of the two to the student of war, for it treats of the whole history of armed force and the effects of the technique of war-making on man—his mind, his life, and his future.

Here we can trace, in most readable form, the history of the development of weapons and their uses from "The Age of Valour" (mainly B.C.) through "The Age of Chivalry" to "The Age of Gunpowder" and thence into the dawn and development of mechanization with "The Age of Steam" and "The Age of Oil," and so to "The Age of Atomic Energy."

The burden of the author's argument is that as man's inventive genius has produced more and more powerful and long-ranged weapons, so he has lost increasingly not merely his sense of moral values in waging war but his perspective in regard to its object and its aftermath. In short, he shows that war has become so destructive that there can be no "fruits" of victory.

This is not, however, the moralizing of an idealist bent on demonstrating the folly of all war, but the close reasoning and careful analysis of the professional realist leading him to the conclusion that "so long as the urge to fight remains part of human nature" the object of the victor should be to impose his will on the vanquished "with the least possible destruction to either, because destruction is never more than a means to an end." He only reiterates the lesson of all major wars when, in looking into the future, he writes ". . . occupation becomes the strategic aim, and destruction of the enemy's power of resistance the means of accomplishing it." But—and this is the pith of his argument—if unprofitable destruction is to be avoided, victory must be sought not in "more or larger atomic bombs—but instead in speed of movement which will lead to the rapid occupation, in contradiction to the rapid obliteration, of the enemy's country. What, at present, is missing is ability to follow bombardments up, or to dispense with them altogether."

Instead of the follow-up taking "months or years, as was the case during the recent war," he pictures rocket-ship-borne armies invading within hours or days of the minimum cover bombardment to impose "will upon will," and not merely "force upon force," or "obliteration upon obliteration."

General Fuller will not win over all his readers to all his views and deductions, for it may be retorted that this is war as he would like it to be waged, if war there must be, and that he is ahead of practicabilities. Nevertheless this book is a notable contribution to the study of war and can be highly recommended. One criticism there must be: why are we inflicted with irritating interruptions by having to turn to the end of each chapter to find what should be footnotes on the appropriate pages?

**The Place of War in History.** By Cyril Falls. (Oxford University Press). 2s.

The inaugural lecture delivered to the University of Oxford by the new Chichele Professor of the History of War deserves the much larger and wider audience which, it is to be hoped, its publication will attract. It should be read by every student of war and all present and future historians, for it is a clear and most readable exposition of the fallacy that the study of war is for the specialist and of the fact that the "moral distaste with which war is regarded by some historical teachers and students . . . has led to an ostrich-like aversion of the subject." In that he sees—and few of those who have lived through two major wars should dispute—that "this may constitute a national menace to which we have been particularly subject."



In elaborating this theme most ably, the author provides on the one hand the ammunition and incentive to the professional student of war to broadcast his expert knowledge outside his own limited circle, and on the other an exhortation that "There are . . . not many positive services the historian can do for the State, and in a wider sense the World, higher than that of tracing the cause of wars, describing the means by which they were fought, ascertaining the reasons which led to victory . . . describing the effects, and estimating the conditions likely to produce future wars and in which they would be fought."

He suggests that the generation which grew to maturity during the inter-war years may have lacked historical background, as well as political leadership, to "estimate the forces which make for war and what war involves." His lecture provides a timely warning to the present generation and its historians lest history repeat itself in this failure.

**Pistols: Their History and Development.** By James Frith. (Lantern Publishing Co. Ltd.). 2s. 6d.

This little pamphlet of 24 pages is intended as a guide to the collector of antique pistols and contains useful information on pistols generally.

**Customs of the Services.** By Group-Captain A. H. Stradling, O.B.E. (Gale & Polden). 5s.

This book can be summed up very well by a paragraph in the preface which says "This book is intended to assist those young officers who have been commissioned from the ranks or direct from civil life, few of whom will have had any experience of, or opportunity of studying, "Service etiquette" or "Customs of the Services."

It deals with such matters as the origin of Service customs, behaviour in Mess, leadership, discipline, saluting, social responsibilities, Royal Courts and other ceremonies.

#### NAVAL

**The British Navies in the Second World War.** By Admiral Sir W. M. James, G.C.B. (Longmans, Green & Co.). 21s.

In *The British Navies in the Second World War* Admiral James has presented a condensed, overall account of the war at sea from 1939-1945. He has avowedly written for the general public rather than for the student of naval warfare and, as he explains, limitations of space prevent the inclusion of much that would find a place in a larger book or in one restricted to a particular campaign. But he has set out to write history, and it is as such that his book must be judged.

An introductory chapter explains how modern war has complicated the work of ensuring the safety of our sea communications, and how the Air Arm revolutionised tactics and armaments. He stresses the close co-operation between the three Services in the later stages of the War despite the fact that during the inter-war years this was "to a great extent nullified by a concurrent effort to widen the gulf between the two older Services and the Air Force, for reasons that to-day are incomprehensible."

The chapter on "Peace to War" indicates how the Washington and the London Naval Treaties, as well as the restrictions imposed by the Chancellor of the Exchequer, tended to reduce the size of the Navy, especially in cruisers, destroyers and convoy escort vessels, to a dangerously low level. What was left of it, however, continued to train in new methods, particular attention being paid to night-fighting. Eventually an increased building programme was initiated only just in time; even so, we were desperately short of ships during the early years of the War. It was only a few months before the outbreak of hostilities that the pernicious system of dual control of aircraft in ships, which had persisted for over twenty years, was abandoned and the Navy acquired full control over the Fleet Air Arm.



The chapters on the war years are divided up into selected periods and describe how the Imperial and Dominion Navies, together with the Royal Air Force, contributed to the defeat of the enemy. An account of the work of the United States Navy in the Pacific, reinforced after VE-day by the British Pacific Fleet, would have occupied far more space than could be allotted, and Admiral James has been obliged to exclude all but the barest mention of its activities in that theatre. Similarly, the work of the Army is referred to chiefly to show how it fitted in with the major strategy of the War, and how, without the assistance of the other two Services, the magnificent achievements of the land forces would not have been possible.

Within each period the progress of the War is surveyed in all quarters of the globe. The reader is given a clear idea of what our naval forces achieved, why they were sometimes more concentrated in one area than in another, and how it was that our resources in ships, more particularly during the earlier stages, were by no means adequate for the task they had to perform. This method of presentation is eminently suitable for the author's purpose. In a world-wide war, campaigns or operations are of varying importance and intensity; there may be long intervals between successive major efforts. But in one campaign the struggle never eased up from the first day of the war until the last; that was the protection of our sea communications—usually referred to as the Battle of the Atlantic.

The Merchant Navy, protected by a gradually increasing force of escorts, both surface and air, which kept us and our Russian Allies supplied, besides carrying troops to all the fighting areas, is not forgotten. Some idea of the magnitude of its contribution to victory may be gleaned from the convoy statistics given.

The concluding chapter is devoted to a review of the War at sea throughout the whole period, including a well-deserved tribute to the sterling qualities of those "hostilities only" officers and men who formed such a large proportion of the war-time Navy. The faulty maritime strategy of the Axis Powers is commented upon, while the ultimate responsibility for our inability to overcome the U-boat menace until well on in the War is laid at the right door—that of a British public whose outlook, thanks to the misleading of the politicians, was very different to that in the years immediately preceding 1914, as typified by "We want eight [battleships], and we won't wait!" It is a timely warning to-day, when we seem to be heading again for the dire disasters of under-insurance.

The war services of the principal naval commanders are briefly sketched. There is one slip: Vice-Admiral Syfret was engaged in the Mediterranean convoy battle nine months before the Madagascar operations, not three months afterwards. The invention of the magnetic mine—Hitler's first secret weapon—is ascribed to German scientists, but we used a magnetic mine in 1918.

The book closes with a peep into the future and a reminder that for every new weapon introduced an antidote has always been found, and there is no justification for assuming that the atomic bomb is any exception to this rule. This comforting assurance must not, however, lead us to assume that there will be *time* to find the antidote if research is left until war comes.

Four useful appendices are given. Appendix B, however, is slightly inaccurate. Final adjustments of the losses, made since it was compiled, now give a total of one more ship each for cruisers, sloops, corvettes and frigates, and four more for destroyers. Battleships include battle cruisers. The 22 coloured plans accompanying the text are clearly drawn and enable the reader to follow the course of events.

It is to be feared, however, that proof-reading is not Admiral James' strong suit and it is just here that this work fails us as a reliable book of reference, for there are numerous slips. For instance, in Plan 1 the date of the sinking of the "Prince of Wales" and the "Repulse" is a year too late; in Plan 2 the s.s. "Element" should be the s.s. "Clement" and in Plan 13 the "Gallant" was not sunk on 10th January, though she was seriously damaged by a mine and later became a constructive total loss. In the text, too, several



misprints occur: "Faulkner" for "Faulknor" and "Falconer" for "Forester" (two 'r's, not three) on p. 29; "Husky" for "Hasty" on p. 67; "Iris" for "Isis" on p. 120; while on p. 149 it is stated that the "Renown" (*sic*) was sunk at the same time as the "Prince of Wales." The "Mastiff" (p. 35) was a trawler, not a destroyer.

The Index is not as complete as it might be, not all the references to particular ships being listed, while some are omitted altogether. The spelling of ships' names, moreover, occasionally varies from that in the text, the correct spelling being found sometimes in the Index and at others in the text.

Apart from such blemishes, Admiral James can be congratulated on having produced, before everyone has lost interest in the late war, a well-balanced and very readable record of the part played in it by the British Navies.

**Adventurous Life.** By Admiral Lord Mountevans, K.C.B., D.S.O., LL.D. (Hutchinson & Co.). 20s.

This is the gay and light-hearted autobiography of a bad boy who, by sheer force of character and enterprise, ended up as an Admiral with a peerage. His was indeed an "adventurous life" for he sought adventure, whether in the Antarctic, in destroyers, in big ships, or in civil defence after he had left the sea. Where others plodded along in a rut, Teddy Evans constantly jumped out of it to do the unconventional or seize the golden opportunity.

His style is in keeping with his story—live and breezy. This is a modern version of W. G. H. Kingston's "Three Midshipmen" series and, as such, very much a book for boys. It can scarcely be regarded as serious history, but his many friends and admirers will enjoy reading it and can scarcely fail to be infected by his energy and *joie de vivre*.

**Les Flottes de Combat 1947.** Edited by H. Le Masson (Société d'Éditions Géographiques, Maritimes et Coloniales, Paris Vie).

The French equivalent to *Jane's Fighting Ships* makes its appearance in a new and more important guise. A much enlarged lay-out provides bigger photographs and line-drawings of the warships of the World than those of earlier editions. It is up-to-date and well printed, even though the paper is not quite up to the *de luxe* standard of *Jane*.

A very valuable feature is the section for each of the principal naval Powers devoted to *Aviation Navale* which gives photographs and line-drawings of naval aircraft. As these are now quite as important units of fleets as surface or underwater warships, it is only logical that they should be recorded in this naval annual—*Jane* and *Brassey* please note!

#### MILITARY

**Strategy as Exemplified in the Second World War: A STRATEGICAL EXAMINATION OF THE LAND OPERATIONS.** By Lieut.-Colonel Alfred H. Burne, D.S.O. (Cambridge University Press.) 5s.

The Lees Knowles Lectures for 1946 are here reproduced in book form, with revisions and some small additions. They are well worthy of study. The book is quite short—only 86 pages of good, clear type. There are four chapters, dealing respectively with Strategical Theory; Poland, Dunkirk and Russia; North Africa and Italy; Japan and North-West Europe. The author is always concise, admirably clear and eminently readable. His comments and judgments deserve every consideration.

This is a book to be recommended to all military students.

**Welsh Guards at War.** By Major L. F. Ellis, C.V.O., C.B.E., D.S.O., M.C. (Gale and Polden, Ltd.) 25s.

Regimental histories covering the latest war are gradually appearing. Such records, of course, are mainly of interest to people connected with the regiment concerned. This



story of the Welsh Guards, however, may well appeal to a wider public. It is well written, well arranged, very well produced and exceptionally well mapped and illustrated.

Field-Marshal Lord Alexander contributes a Foreword, from which we may quote the following: "As an old guardsman I shall always be proud that the Welsh Guards played such a gallant and distinguished role under my command in the Second World War. In 1940 the 1st Battalion fought with me on the beaches of Dunkirk, whilst the 2nd Battalion was fighting . . . at Boulogne. Later, the 3rd Battalion of the Welsh Guards took an active part in the North African campaign, which was brought to a final and victorious conclusion by the Battle of Tunis. . . . From then onwards this splendid Guards battalion was to remain under my command all through that hard and bitter struggle of the Italian campaign. . . . This young battalion not only worthily upheld, but added fresh lustre to the proud traditions of the Brigade of Guards."

#### AIR

**R.A.A.F. Over Europe.** Edited by Frank Johnson. [Foreword by Air Vice-Marshal H. M. Wrigley, C.B.E., D.F.C., A.F.C. (Eyre & Spottiswoode). 10s. 6d.]

This is a brief history of the work of and principal personalities in that part of the Royal Australian Air Force which came overseas to fight in Europe during the 1939-45 War. It was prepared by members of the staff of R.A.A.F. Overseas Headquarters, London. Mr. Winston Churchill has written a short introduction.



## ADDITIONS TO THE LIBRARY

### GENERAL

- A RECORD OF THE WAR: THE TWENTY-THIRD QUARTER (1 APRIL, 1945-30 JUNE, 1945). By Philip Graves. 8vo. (Hutchinson 1946.) 12s. 6d.
- A REFRESHER COURSE IN ECONOMICS. By A. H. Thomas. 8vo. (Newnes 1946.) 5s.
- WAR SPEECHES: RT. HON. WINSTON S. CHURCHILL. Vol. V—The Dawn of Liberation. Vol. VI—Victory. 8vo. (Cassell 1946.) 12s. 6d. each vol.
- THE PURPOSE OF PARLIAMENT. By Quintin Hogg. 8vo. (Blandford Press 1946.) 10s. 6d.
- PALESTINE'S ECONOMIC FUTURE. Edited by J. B. Hobman. 4to. (Lund Humphries 1946.) 15s.
- MORALE IN BATTLE. By Field Marshal Viscount Montgomery. Reprint of Address to the British Medical Association, November, 1946. *British Medical Journal*.
- MOONDROP TO GASCONY. By Anne Marie Walters. 8vo. (Macmillan 1946.) 8s. 6d.
- IMPERIAL COMMONWEALTH. By Lord Elton. 8vo. (Collins 1945.) 21s.
- PRIMER OF THE COMING WORLD. By L. Schwarzschild. 8vo. (Hamish Hamilton 1944.) 10s. 6d.
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- THE ECONOMICS OF PEACE. By K. E. Boulding. 8vo. (Michael Joseph 1946.) 15s.
- JAN SMUTS. By F. S. Crafford. 8vo. (Allen & Unwin (2nd ed.) 1946.) 21s.
- THE GERMAN QUESTION. By Wilhelm Röpke. 8vo. (Allen & Unwin 1946.) 10s. 6d.
- THE UNITED NATIONS ORGANISATION HANDBOOK. By Andrew Boyd. 8vo. (Pilot Press 1946.) 8s. 6d.
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- SLUMP AND RECOVERY. By H. V. Hodson. 8vo. (Oxford University Press 1938.) 10s. 6d.
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- PROBLEMS OF THE PEACE. By Wilson Harris. 8vo. (Cambridge University Press 1944.) 3s. 6d.
- WORLD WAR: ITS CAUSE AND CURE. By Lionel Curtis. 8vo. (Oxford University Press 1945, 2nd ed.) 7s. 6d.
- POLAND: THE STRUGGLE FOR POWER, 1772-1939. By Henryk Frankel. 8vo. (Lindsay Drummond 1946.) 12s. 6d.

### NAVAL

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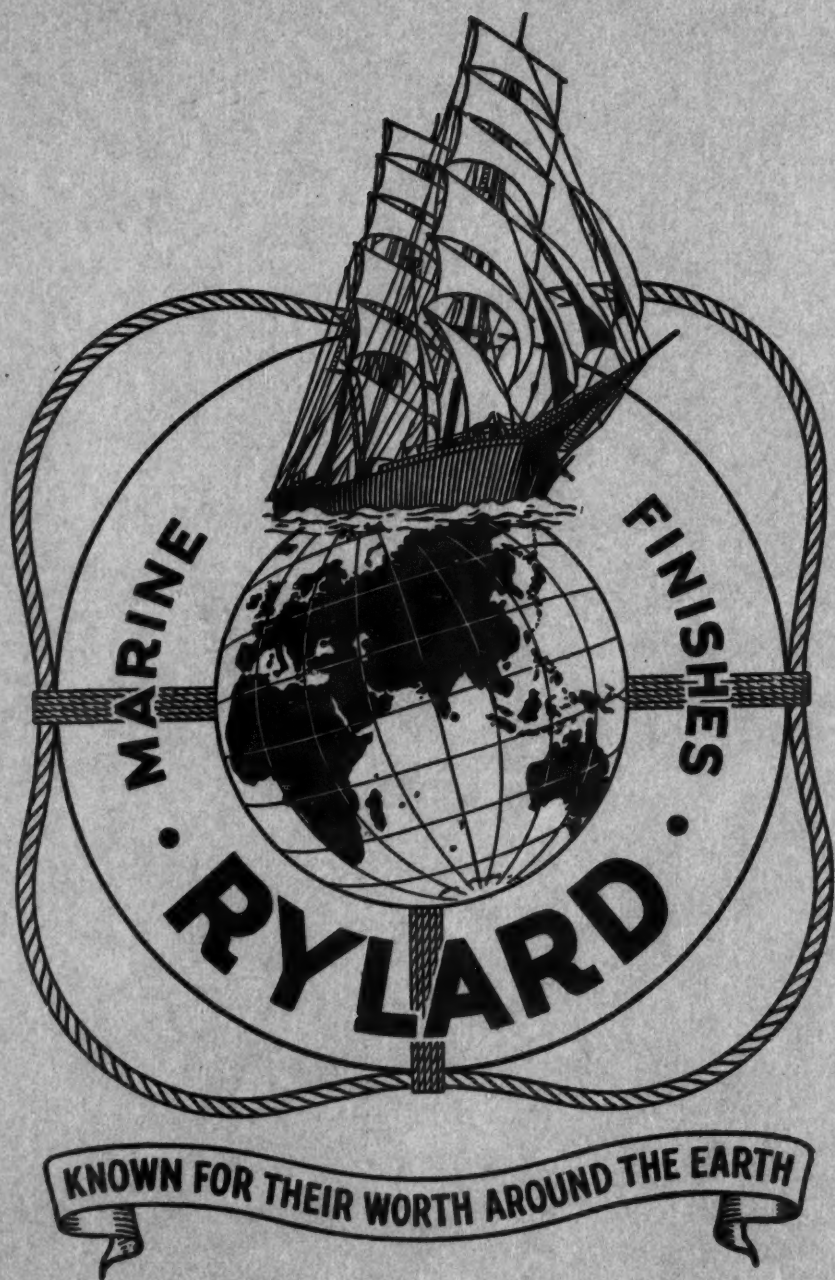
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